SAMSUNG

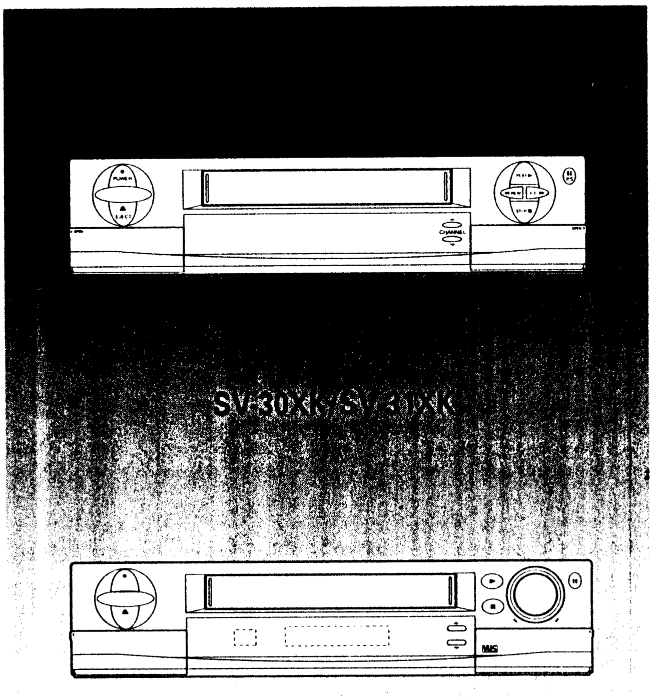
VIDEO CASSETTE RECORDER

SV-30XK/SV-31XK
SV-40XK

VHS
PAL

SERVICE Manual

VIDEO CASSETTE RECORDER



SV-40XK

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IMPORTANT SERVICE GUIDE

1. SERVICING FEATURES OF THE X-5 CHASSIS

After replacing the cylinder ass'y, the remote control (part number : **69099-633-252**) can be used to adjust the "X-point tracking center adjustment (tape path alignment) and "head s/w point" adjustment. The remote control part number "**633-252**" is printed on the inlay of remote control.

1) How to adjust "X-point tracking center" when adjusting tape path alignment :
   Press the "**1**" button and the "**INPUT**" button simultaneously. This will adjust the tracking center automatically.
2) How to adjust "head s/w point" :
   Press the "**3**" button and the "**INPUT**" button simultaneously. This will automatically position the H'd s/w at 6.5H ± 0.5H.

If the remote control is not available :
- See page 9-3 of service manual for X-point tracking center adjustment.
- See page 9-9 of service manual for Head S/W Point adjustment.

2. SERVICE GUIDE

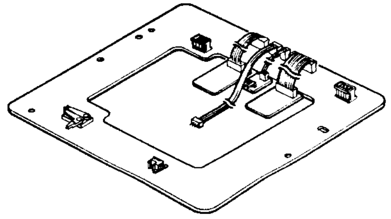
1) For this VCR chassis, the program switch and the sensors (start/end/reel) are located on the main PCB, not on the deck ass'y.
2) As long as the deck ass'y is connected to the main PCB, all repairs are possible.
   Important : In order to repair the main PCB without the deck ass'y connected, the X-5 chassis jig should be used.
3) To emulate the function of the sensors, connect a jumper or solder land (two point) at W751 on the function-timer PCB.
4) The X-5 chassis jig can be used for the following :
   - When repairing or confirming the operation of the deck ass'y.
   - When replacing or repairing the components located under the deck ass'y.
   - When repairing the function-timer PCB.
5) The X-5 chassis jig can not be used for the following :
   - Repairing defects in the video section.
   - Repairing defects in the audio section.
   - If the defect is related to tape speed.

✱ Accurate repair may not be possible due to external noise between the deck ass'y and main PCB.

✱ If tape control signal is not connected to the jig, VCR must be operated in SP mode.

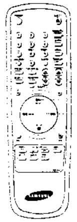
3. SERVICE JIG

JIG ITEM	PART NO.	USE
X-5 CHASSIS JIG	68140 - 500 - 013	Connects the dexk ass'y to the main PCB connecting cable.
REMOTE CONTROL ASS'Y	69099 - 633 - 252	X-point tracking center & head S/W point adjustment.



(X-5 CHASSIS JIG)

OPTIONAL



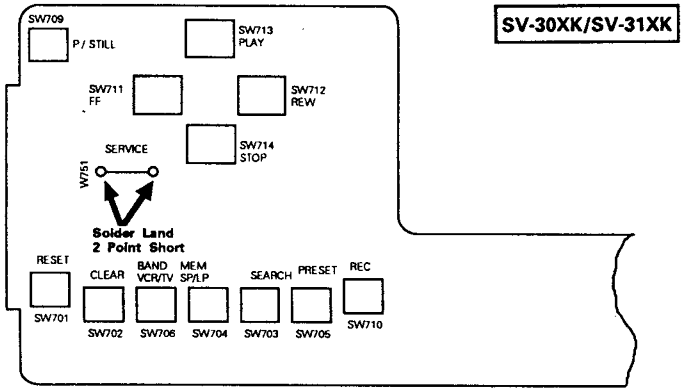
(REMOTE CONTROL ASS'Y)

4. HOW TO CONNECT X-5 CHASSIS JIG

1) Unplug the power cord from AC outlet.

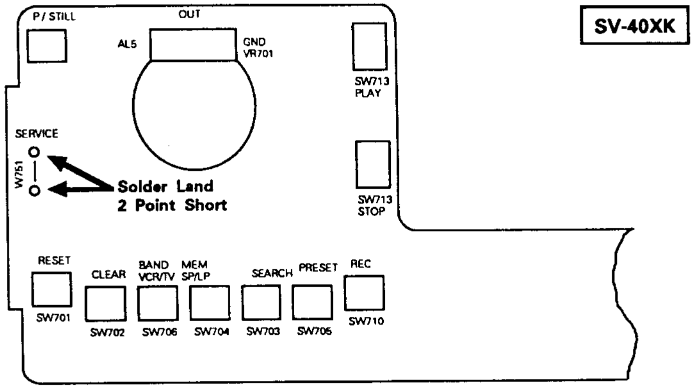
2) Remove the deck ass'y from main PCB (See page 3-3 of service manual).

3) To emulate the function of the sensors, place a jumper or solder land (two point) of W751 on the function-timer PCB (See diagram below).



SV-30XK/SV-31XK
SW709
P / STILL
SW713
PLAY
SW711
FF
SW712
REW
SERVICE
SW714
STOP
W751
Solder Land
2 Point Short
RESET
CLEAR
BAND VCR/TV
MEM SP/LP
SEARCH
PRESET
REC
SW701
SW702
SW706
SW704
SW703
SW705
SW710

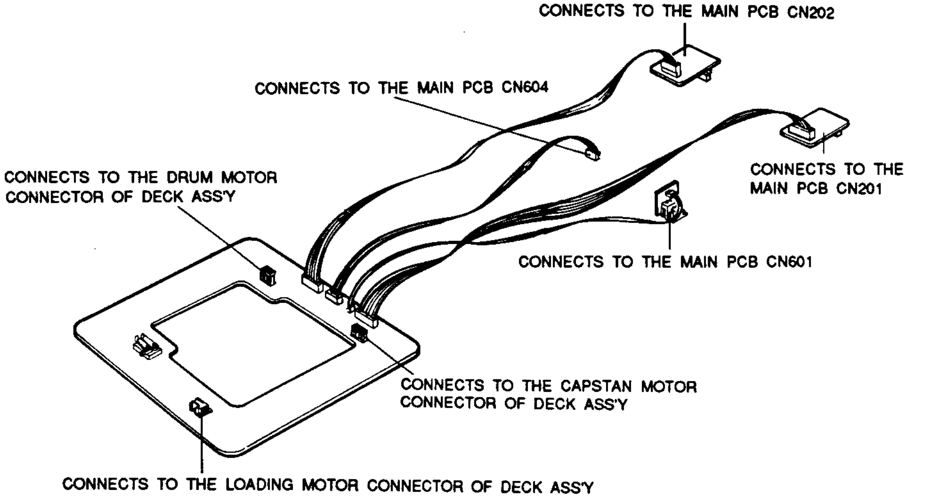
FUNCTION-TIMER (BOTTOM SIDE)



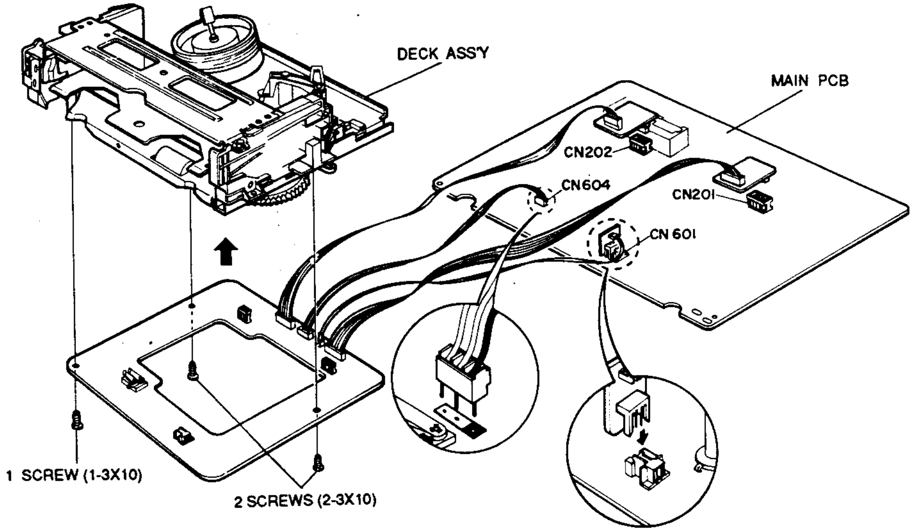
SV-40XK
P / STILL
OUT
AL5
GND
VR701
SW713
PLAY
SERVICE
W751
Solder Land
2 Point Short
SW713
STOP
RESET
CLEAR
BAND VCR/TV
MEM SP/LP
SEARCH
PRESET
REC
SW701
SW702
SW706
SW704
SW703
SW705
SW710

FUNCTION-TIMER (BOTTOM SIDE)

NOTE : After completing repairs, press SW701 on the function-timer PCB in order to reset.



CONNECTS TO THE MAIN PCB CN202
CONNECTS TO THE MAIN PCB CN604
CONNECTS TO THE DRUM MOTOR CONNECTOR OF DECK ASS'Y
CONNECTS TO THE MAIN PCB CN201
CONNECTS TO THE MAIN PCB CN601
CONNECTS TO THE CAPSTAN MOTOR CONNECTOR OF DECK ASS'Y
CONNECTS TO THE LOADING MOTOR CONNECTOR OF DECK ASS'Y



DECK ASS'Y
MAIN PCB
CN202
CN604
CN201
CN 601
1 SCREW (1-3X10)
2 SCREWS (2-3X10)

4) Insert wafers of drum motor, capstan motor and loading motor on X-5 chassis jig into each connectors of deck ass'y and then secure with three screws.

5) Solder the 3 leads of the jig cable to the CN604 on the main PCB.

6) Apply power to the function-timer PCB.

7) Insert a test tape into the housing ass'y.

8) Simultaneously touch the start and end sensor LEDs on the PCB, so that the tape loads automatically. After the tape is loaded, all of the function buttons on the function-timer PCB can be used.

9) If the test tape is ejected while the jig is in use, attempt to re-load the tape by simultaneously touching the start and end sensor LEDs. If the tape still does not road, reset the function-timer PCB by pressing SW701.

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1. PRECAUTIONS

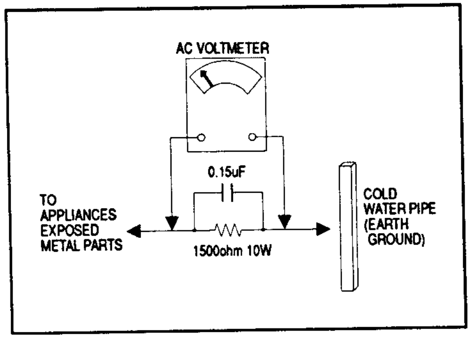
1-1. SAFETY PRECAUTIONS

GENERAL GUIDE LINE

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation paper shields are properly installed.
3. Use an isolation transformer when servicing.
4. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screw heads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 to 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be oo.


AC VOLTMETER
0.15uF
TO APPLIANCES EXPOSED METAL PARTS
1500ohm 10W
COLD WATER PIPE (EARTH GROUND)

LEAKAGE CURRENT HOT CHECK (See Fig.)

1. Plug the AC cord directly into the AC outlet. (Do not use an isolation transformer for this check.)
2. Connect a 1.5K, 10 watt resistor, in parallel with a 0.15uF capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester may be used to make the hot checks, leakage current must not exceed 0.5 milliamp. If a measurement is outside the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

1-2. ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called "Electrostatically Sensitive (ES) Devices". Examples of typical ES devices are integrated circuits, some field effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise, harmless motion such as the brushing together of your clothes fabric to the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

1-3. SAFETY INSTRUCTIONS

1. **Read Instructions** : All the safety and operating instructions should be read before the unit is operated.

2. **Retain Instructions** : The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** : All warnings on the unit and the operating instructions should be adhered to.

4. **Follow Instructions** : All operating and maintenance instructions should be followed.

5. **Cleaning** : Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a dry cloth for dusting cabinet.

6. **Attachments** : Do not use attachments not recommended by the unit product manufacturer, as they may be hazardous or cause damage.

7. **Water and Moisture** : Do not use this unit near water, i.e, bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, or the lake.

8. **Accessories** : Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit, if dropped could cause damage or injury. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the unit. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

a. An appliance and cart combination should be moved with care. Quick stops, excessive force, or an uneven surface may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING
(Symbol provided by RETAC)

9. **Ventilation :** Slot and opening in the cabinet are provided for ventilation to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. Never place your unit on a bed, sofa, rug, or similar surface, ;or on or near a radiator or heat register. This unit should not be placed in a built-in installation such as a book case or rack unless proper ventilation is provided, or manufacturer's instructions have been adhered to.

10. **Power Sources :** This unit should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. To operate the unit by battery or other power source, consult the operating instructions.

11. **Grounding and Polarization :** This unit may be equipped with either a polarized 2-wire AC line plug (a plug having one blade wider than the other) or a 3-wire grounding type plug, a plug having a third (grounding) pin. The 2-wire polarized plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact your electrician to replace your outlet. Do not defeat the safety purpose of the polarized plug.

12. **Power-Cord Protection** : Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. This applies especially to cords of plugs and convenience receptacles, at the point where they exit from the unit.

13. **Lightning** : For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage of the unit from lightning and power-line surges.

14. **Power Lines** : An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

15. **Overloading** : Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

16. **Objects and Liquids :** Never push objects of any kind into the unit as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquids of any kind onto the unit. Should a spill occur, unplug unit and have it checked by a technician before using.

17. **Servicing** : Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards.
Refer all servicing to qualified service person.

18. **Damage Requiring Service** : Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions :

a. When the power-supply cord or plug is damaged.
b. If any liquid has been spilled into, or objects have fallen in the unit.
c. If the unit has been exposed to rain or water.
d. If the unit does not operate normally by following the operating instruction, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.

WARNING ;
Lithium battery - Danger of explosion if incorrectly replaced.
Must only be replaced by a battery of same make and type.
Used batteries shall be returned to the supplier.

e. If the unit has been dropped or the cabinet has been damaged.
f. When the unit exhibits a distinct change in performance, this indicates a need for service.

19. **Replacement Parts** : When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

20. **Safety Check** : Upon completion of any service or repairs to this unit, the safety check procedure should be performed.

IMPORTANT SAFETY NOTICE
There are special components in this equipment which are important for safety. These parts are marked by ⚠ in the schematic diagram, exploded views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts owing to shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

2. SPECIFICATIONS

Design and specifications are subject to change without notice.

Specifications

Operation	Description	Operation	Description
Format	VHS PAL/MESECAM Standard	Audio	
Heads	Video : 2 Rotary heads Audio/Control : 1 Stationary head Erase : 1 Full track erase head	Input Output Wow Flutter (WTD) Signal-to-noise ratio Frequency response	- 8 dBm, 47 Kilohm unbalanced - 4 ± 3 dBm, 1.5 Kilohm unbalanced 0.4% Max (SP) 43dB min (IHF A FILTER) 100Hz - 8KHz (SP)
Receiving Channel	VHF LOW : E2-E4, X,Y, Z, Z+1, Z+2, S1-S10 VHF HIGH : E5-E12, S11-S41 UHF : 21-69	Power requirement	230V (AC 50/60 Hz)
RF Out	CCIR : UHF Channel 36 Preset (UHF Channel 30-39 Adjustable)	Power consumption	Approx. 18 watts
Television System	Standard B/G	Operation temperature	41° F - 104° F (5° C - 40° C)
Color System	PAL/MESECAM	Operation humidity	10% - 75%
Luminance	FM Azimuth Recording	Weight and dimensions	4.4Kg 398(W) X 90.5(H) X 310(D) mm
Color	Down-converted subcarrier phase shifted direct recording		
Tape Speed	SP : 23.39 mm/sec		
Recording/Playback Time	SP : 3 Hours (E-180 Tape)		
FF/REW Time	About 130 sec in REW; 180 sec in FF with E-180		
Video			
Input Output Signal-to-noise ratio Horizontal resolution	0.5 to 2.0Vp-p; 75 ohm unbalanced 1.0 ± 0.2Vp-p; 75 ohm unbalanced Better than 43dB (SP) More than 240 lines (SP)		

* Comparing Chart

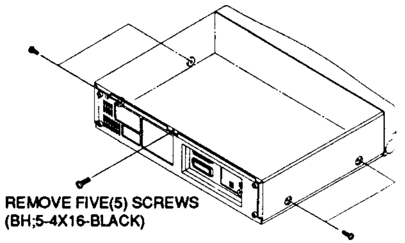
FEATURES / MODELS	BUYER	A/V IN/OUT JACK		AUDIO DUBBING	SHOW VIEW	SHUTTLE (SET)	V.P.S	P.D.C
		FRONT A/V	REAR					
SV-30XK	SEG	X	1 SCART	X	X	X	O	X
	SECO	X	1 SCART	X	X	X	X	X
	NSI	X	1 SCART	X	X	X	X	X
	SEP	X	1 SCART	X	X	X	X	X
	AMF	X	1 SCART	X	X	X	X	X
	SEI	X	1 SCART	X	X	X	X	X
SV-31XK	SEG	X	1 SCART	X	O	X	O	X
	SEC	X	1 SCART	X	O	X	X	X
SV-40XK	SEG	O	2 SCART	O	O	O	O	X
	SECO	O	2 SCART	O	O	O	X	X
	NSI	O	2 SCART	O	O	O	X	X
	SEP	O	2 SCART	O	O	O	X	X
	AMF	O	2 SCART	O	O	O	X	O
	SEI	O	2 SCART	O	O	O	X	X

3. DISASSEMBLY

3-1. Instrument & PCB Disassembly

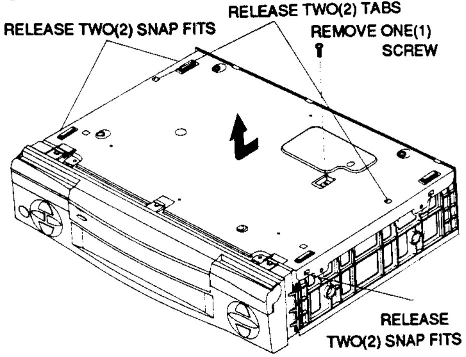
Please dismantle in the order shown.
Reassemble in reverse order.

3-1-1. Top Cabinet Removal


REMOVE FIVE(5) SCREWS
(BH;5-4X16-BLACK)

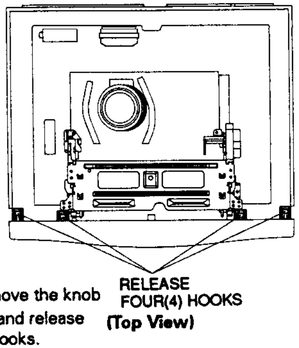
- Remove five(5) screws from the top cabinet.
- Carefully lift the back of the top cabinet and slide it to the rear to remove.

3-1-2. Bottom Cover Removal

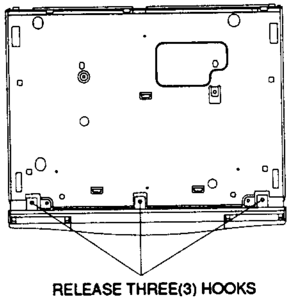

RELEASE TWO(2) TABS
RELEASE TWO(2) SNAP FITS
REMOVE ONE(1) SCREW
RELEASE TWO(2) SNAP FITS

- Remove one(1) screw and lift up the bottom cover in the direction of arrow.

3-1-3. Front Panel Removal

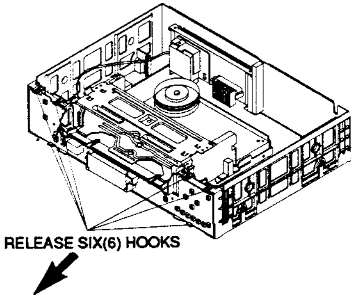

RELEASE FOUR(4) HOOKS
(Top View)

- First remove the knob -shuttle and release four(4) hooks.


RELEASE THREE(3) HOOKS

(Bottom View)

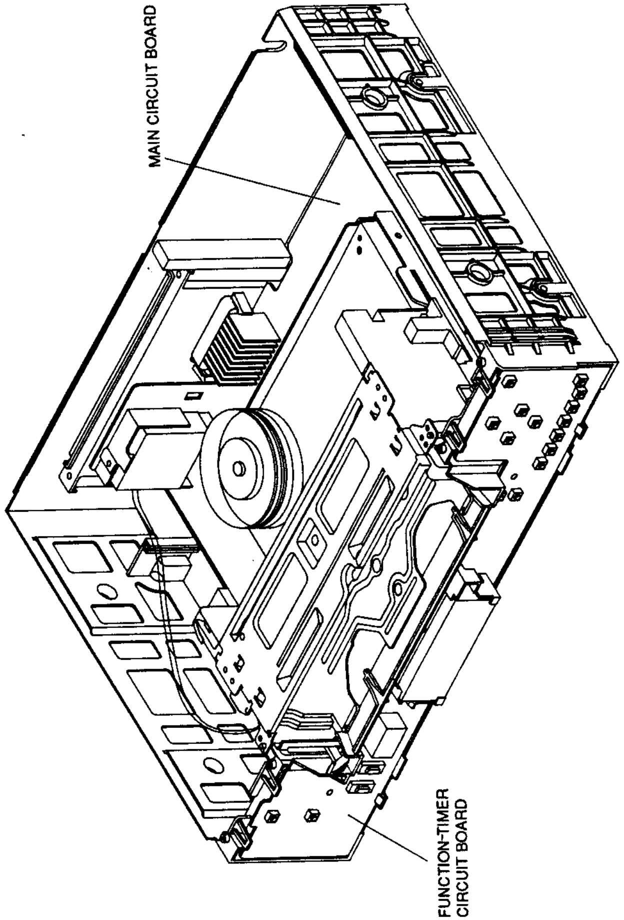
3-1-4. Function-Timer PCB Removal


RELEASE SIX(6) HOOKS

- Release six(6) hooks and then pull the Function-Timer PCB in the direction of arrow.

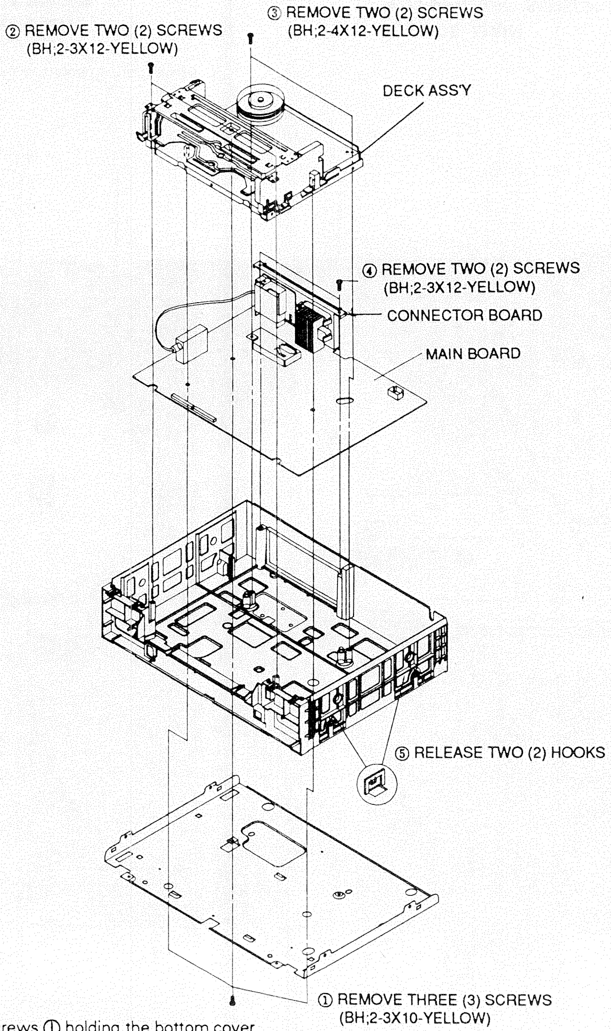
NOTE : Take extreme care not to damage the PCB when removing it.

3-2. Circuit Boards Location


MAIN CIRCUIT BOARD
FUNCTION-TIMER CIRCUIT BOARD

NOTE : 1. When removing chassis, take extreme care not to damage the main PCB front.
2. When reinstalling the deck on the main PCB, take extreme care not to damage the sensor.

3-3. Chassis Unit Removal


② REMOVE TWO (2) SCREWS
(BH;2-3X12-YELLOW)
③ REMOVE TWO (2) SCREWS
(BH;2-4X12-YELLOW)
DECK ASS'Y
④ REMOVE TWO (2) SCREWS
(BH;2-3X12-YELLOW)
CONNECTOR BOARD
MAIN BOARD
⑤ RELEASE TWO (2) HOOKS
① REMOVE THREE (3) SCREWS
(BH;2-3X10-YELLOW)

1. Remove three(3) screws ① holding the bottom cover.
2. Remove two(2) screws ② holding the housing & frame.
3. Remove two(2) screws ③ holding the deck & frame.
4. Lift up the deck ass'y.
5. Remove two(2) screws ④ holding the connector board and lift up the main PCB by releasing two(2) hooks ⑤.

3-4. Deck Parts Locations

3-4-1. Deck (Top View)

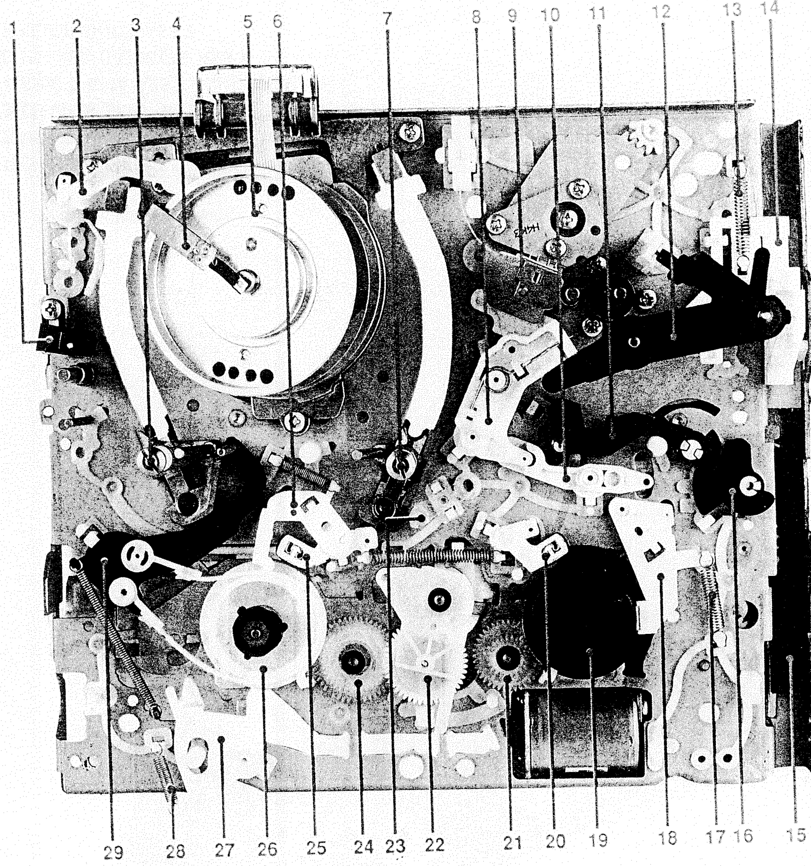

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Fig.1 Deck Parts Locations (Top View)

1. FULL ERASE HEAD
2. HEAD CLEANER ASS'Y (DX-5-RC ONLY)
3. SLIDE GEAR LOADING ASS'Y "T"
4. HEAD BRUSH ASS'Y
5. CYLINDER ASS'Y
6. BRAKE SUB "L"
7. SLIDE GEAR LOADING ASS'Y "S"
8. LEVER PINCH COMP
9. FULL ACE HEAD ASS'Y
10. LEVER PINCH CAM
11. ARM REVIEW ASS'Y
12. UNIT PINCH ROLLER ASS'Y
13. SPRING SLIDE PUSH
14. SLIDE PINCH
15. SLIDE RACK HOUSING
16. LEVER REVIEW
17. SPRING BRAKE SUB "R"
18. BRAKE SUB "R" ASS'Y
19. REEL DISK "R" ASS'Y
20. BRAKE MAIN "R" ASS'Y
21. GEAR RELAY "T" ASS'Y
22. IDLER ASS'Y
23. PRISM LED
24. GEAR RELAY "S" ASS'Y
25. BRAKE MAIN "L" ASS'Y
26. REEL DISK "L" ASS'Y
27. LEVER REC SWITCH
28. SPRING REC SWITCH
29. ARM TENSION FULL ASS'Y

3-4-2. Deck (Bottom View)

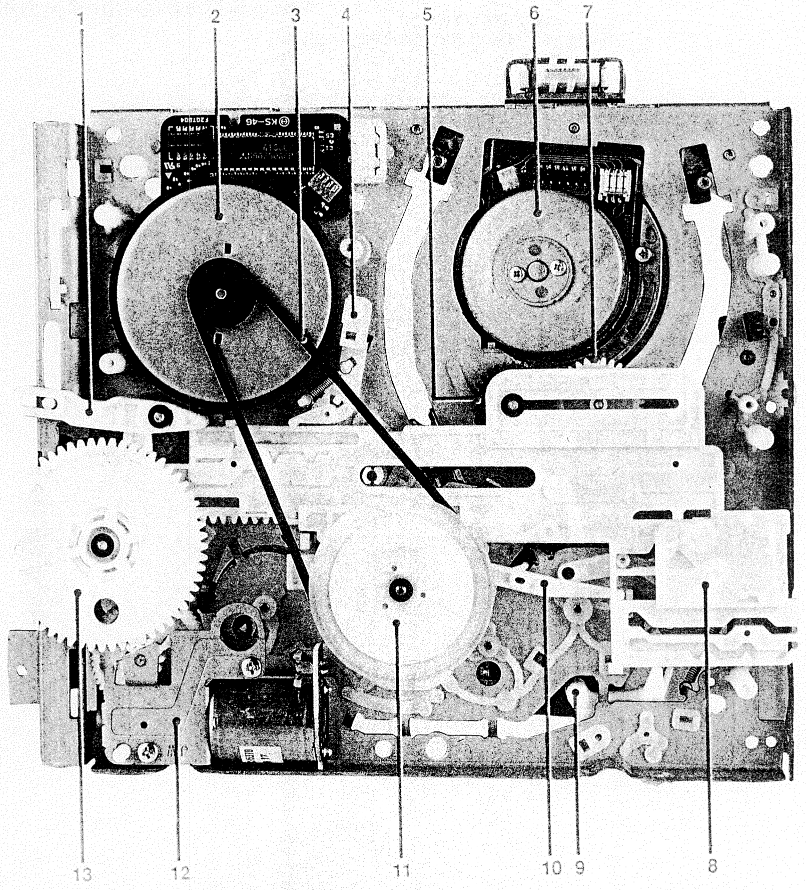


Fig. 2 Deck Parts Locations (Bottom View)

1. LEVER SLIDE PINCH
2. MOTOR D.D CAPSTAN
3. BELT CAPSTAN
4. BRAKE CAPSTAN ASS'Y
5. GEAR LOADING "R" ASS'Y
6. MOTOR CYLINDER
7. GEAR LOADING "L" ASS'Y
8. SLIDE MAIN
9. LEVER REC SWITCH
10. LEVER IDLER CHANGE
11. CLUTCH ASS'Y
12. UNIT LOADING
13. GEAR MASTER

3-5. Housing Assembly

3-5-1. Housing

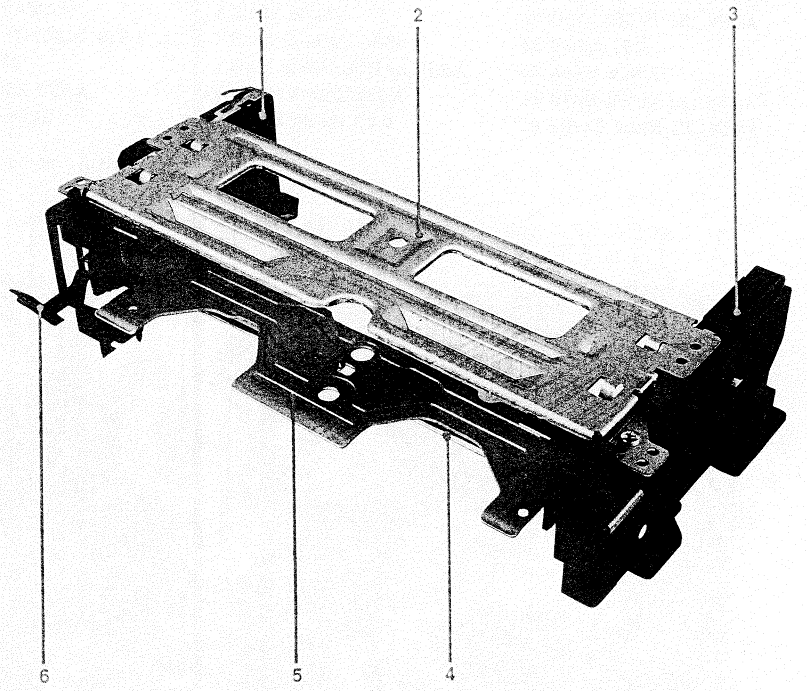


Fig. 3 Housing Parts Locations

1. CHASSIS SIDE "L" ASS'Y
2. UPPER CHASSIS
3. CHASSIS SIDE "R" ASS'Y
4. SHAFT ARM ASS'Y
5. HOLDER CASSETTE ASS'Y
6. LEVER DOOR ASS'Y

3-5-2. Removal from Main Base

1) Remove three(3) screws ①.

2) Lift the housing ass'y in the direction of arrow "B" while pushing the tab ② in the direction of arrow "A". (Refer to detail drawing)

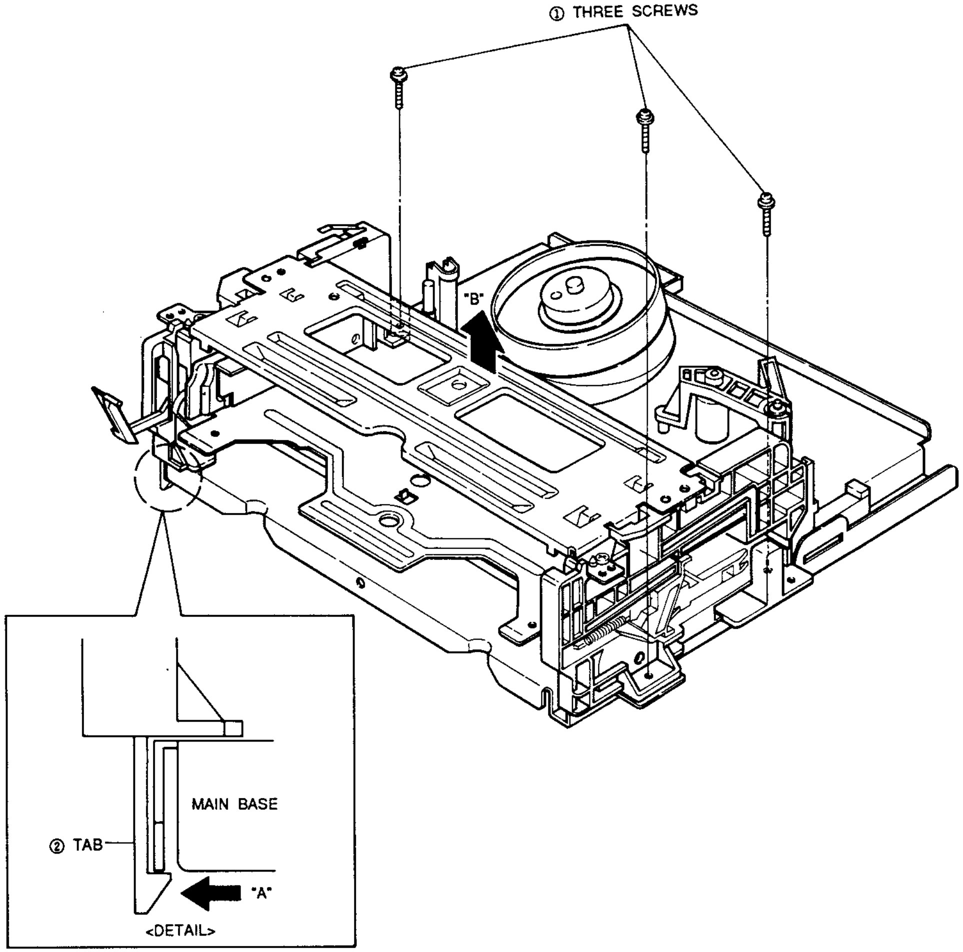

① THREE SCREWS
"B"
MAIN BASE
② TAB
"A"
<DETAIL>

Fig. 4 Housing Ass'y Removal from Main Base

3-5-3. Disassembly

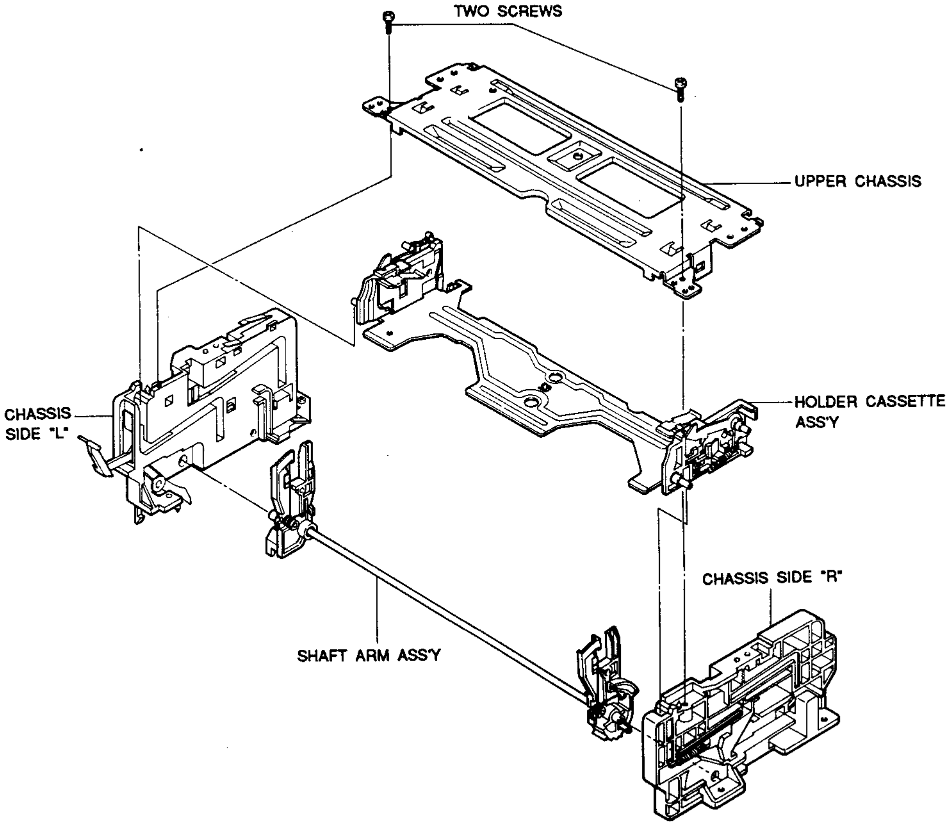

TWO SCREWS
UPPER CHASSIS
CHASSIS SIDE "L"
HOLDER CASSETTE ASS'Y
CHASSIS SIDE "R"
SHAFT ARM ASS'Y

Fig. 5 Housing Ass'y Removal

3-5-4. Upper Chassis Removal

1) Remove two(2) screws ①.

2) Lift the upper chassis ④ in the direction of arrow "C" while pushing the two(2) tabs ②,③ in the direction of arrows "A", "B". (Refer to detail drawings "A", "B")

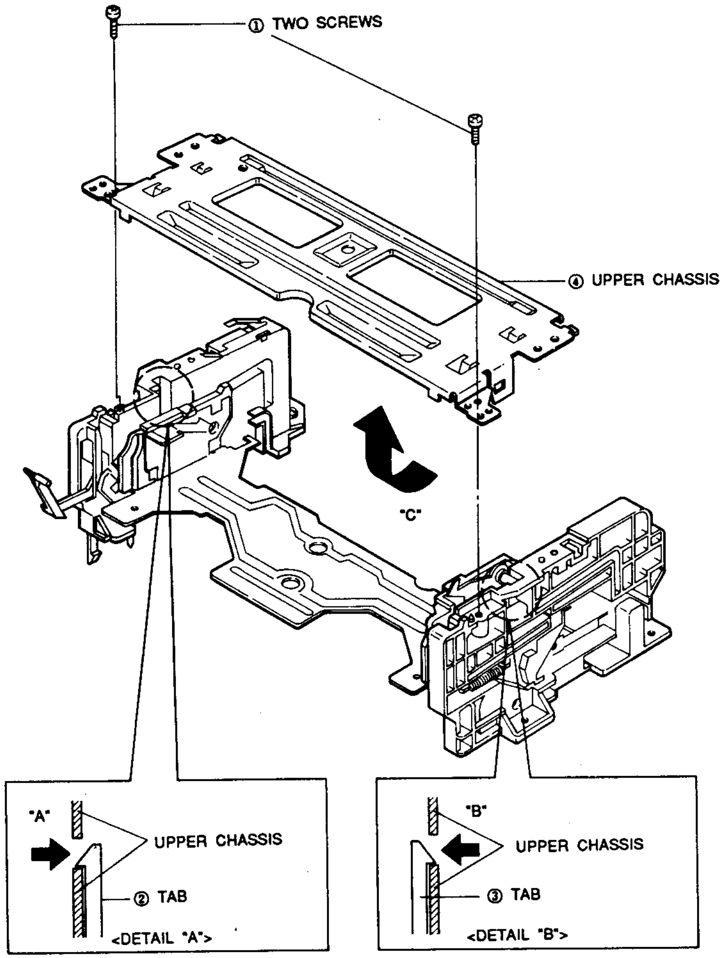

① TWO SCREWS
④ UPPER CHASSIS
"C"
"A"
UPPER CHASSIS
② TAB
<DETAIL "A">
"B"
UPPER CHASSIS
③ TAB
<DETAIL "B">

Fig. 6 Upper Chassis Removal

3-5-5. Holder Cassette Ass'y & Chassis Side L/R Removal

1) Lift the holder cassette ① in the direction of arrow "A" (Refer to Fig. A).

2) Remove the chassis side "L" ② & "R" ③ from shaft arm ass'y ④ in the direction of arrows "B", "C" (Refer to Fig. B).

NOTE : If you operate the deck when the holder cassette ass'y is removed, the shaft arm "R" and the slide damper are not returned to their original position. If this happens by accident, push the slide damper of chassis side "R" in the direction of arrow "D", and return the slide damper in the reverse direction of arrow "D" when the shaft arm ass'y is in eject mode.

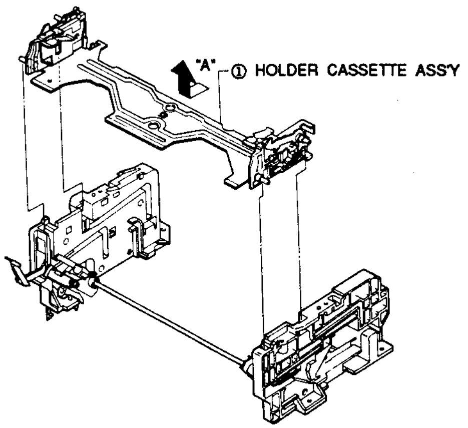

"A"
① HOLDER CASSETTE ASS'Y

Fig. A

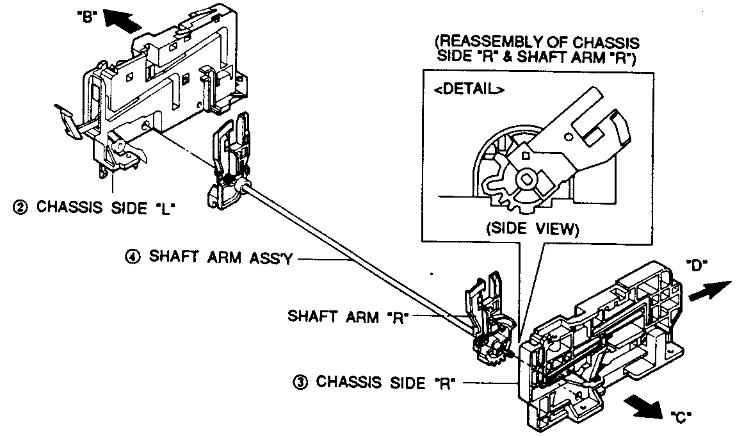

"B"
(REASSEMBLY OF CHASSIS SIDE "R" & SHAFT ARM "R")
<DETAIL>
(SIDE VIEW)
② CHASSIS SIDE "L"
④ SHAFT ARM ASS'Y
"D"
SHAFT ARM "R"
③ CHASSIS SIDE "R"
"C"

Fig. B

Fig. 7 Holder Cassette Ass'y & Chassis Side L/R Removal

3-5-6. Chassis Side "R" Parts Locations

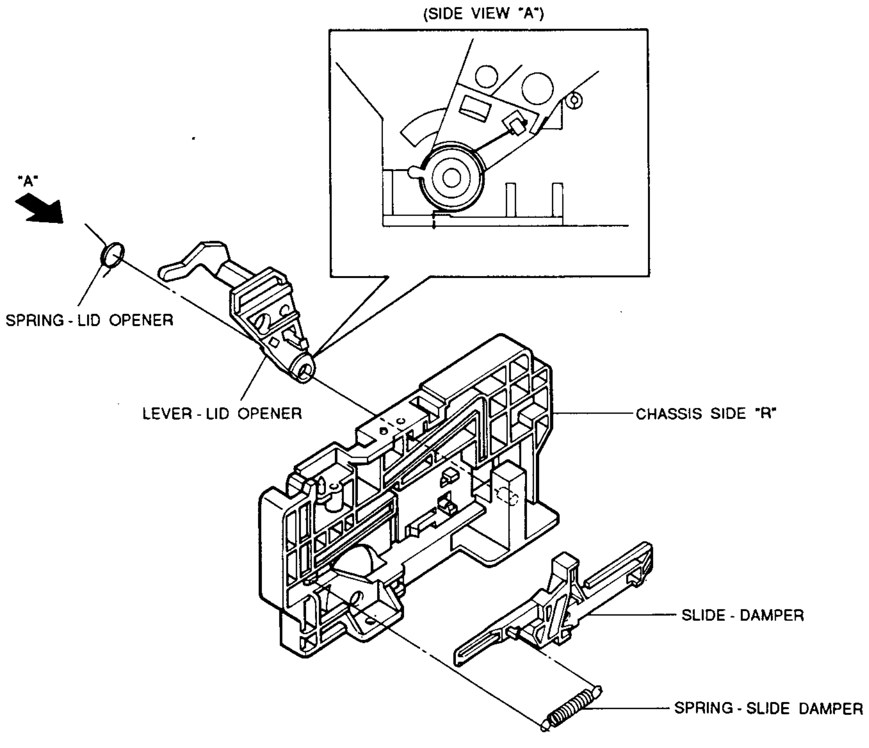

(SIDE VIEW "A")
"A"
SPRING - LID OPENER
LEVER - LID OPENER
CHASSIS SIDE "R"
SLIDE - DAMPER
SPRING - SLIDE DAMPER

Fig. 8 Chassis Side "R" Parts Locations

3-5-7. Slide Damper Removal

1) Remove the spring slide damper ①.
2) Push the stopper ③ of the chassis side "R" ④. Move the slide damper ② in the direction of arrow.
3) Align the slide damper ② with the chassis side tab (as shown detail drawing).
4) Lift the slide damper ② to remove.

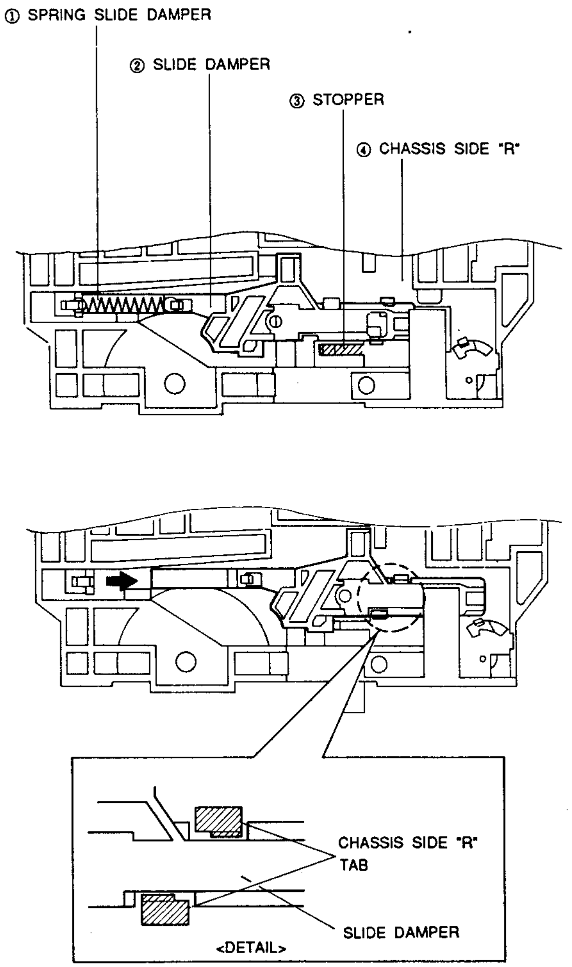

① SPRING SLIDE DAMPER
② SLIDE DAMPER
③ STOPPER
④ CHASSIS SIDE "R"
CHASSIS SIDE "R"
TAB
SLIDE DAMPER
<DETAIL>

Fig. 9 Slide Damper Removal

3-6. Cylinder Ass'y

3-6-1. Exploded View of Cylinder Ass'y

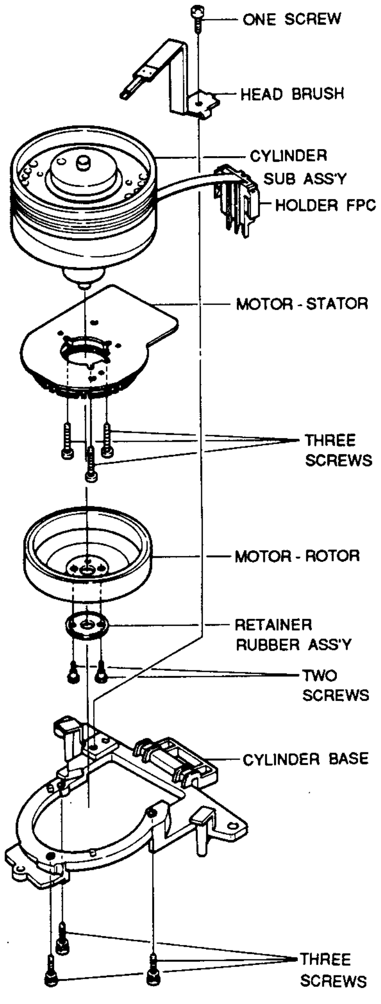

ONE SCREW
HEAD BRUSH
CYLINDER
SUB ASS'Y
HOLDER FPC
MOTOR - STATOR
THREE
SCREWS
MOTOR - ROTOR
RETAINER
RUBBER ASS'Y
TWO
SCREWS
CYLINDER BASE
THREE
SCREWS

Fig. 10 Exploded View of Cylinder Ass'y

3-6-2. Stopper Tape & Ass'y Head Cleaner Removal

[1] Stopper Tape Removal
(Only for deck : DX5-R, Refer to Fig. A)

1) Release one(1) tab ① in the direction of arrow "A".
(Refer to detail drawing)
2) Lift the stopper tape ② in the direction of arrow "B".

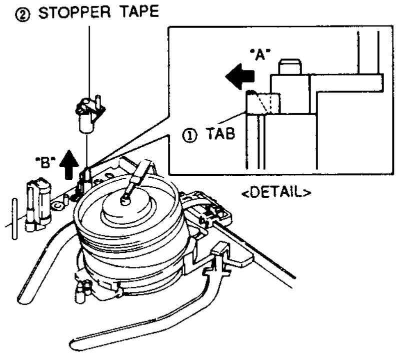

② STOPPER TAPE
"A"
① TAB
"B"
<DETAIL>

Fig. A

[2] Ass'y Head Cleaner Removal
(Only for deck : DX5-RC, Refer to Fig. B)

1) Release one(1) tab ① in the direction of arrow "A".
2) Lift the ass'y head cleaner ② in the direction of arrow "B".

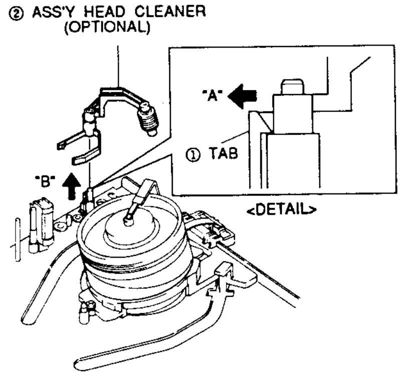

② ASS'Y HEAD CLEANER
(OPTIONAL)
"A"
① TAB
"B"
<DETAIL>

Fig. B

Fig. 11 Stopper Tape & Ass'y Head Cleaner Removal

3-6-3. Cylinder Ass'y Removal from Main Base

1) Remove three(3) screws ① holding the main base and the cylinder ass'y.
2) Lift the cylinder ass'y ② in the direction of arrow.

NOTE : Do not touch the video heads during removal or installation.

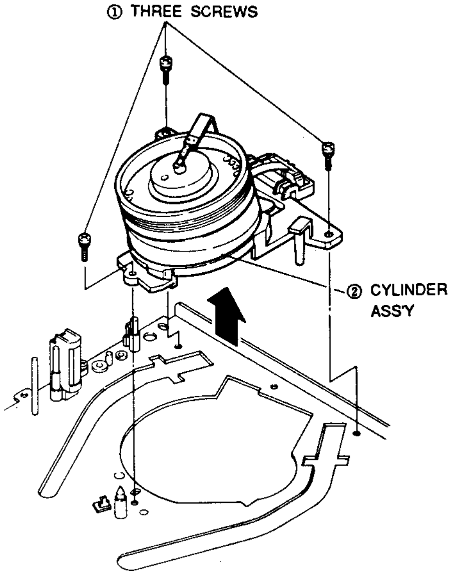

① THREE SCREWS
② CYLINDER
ASS'Y

Fig. 12 Cylinder Ass'y Removal from Main Base

3-6-4. Head Brush & Holder FPC Removal

1) Remove one(1) screw ① and then lift the head brush ②.
2) Release the holder FPC tab holding the cylinder base ④ in the direction of arrow. (Refer to detail drawing)
3) Disconnect the holder FPC ③ from the cylinder base ④.

NOTE : When disconnecting the holder FPC ③ from the cylinder base ④; Take care not to disconnect the FPC cable from the holder FPC (The FPC cable is very short.).

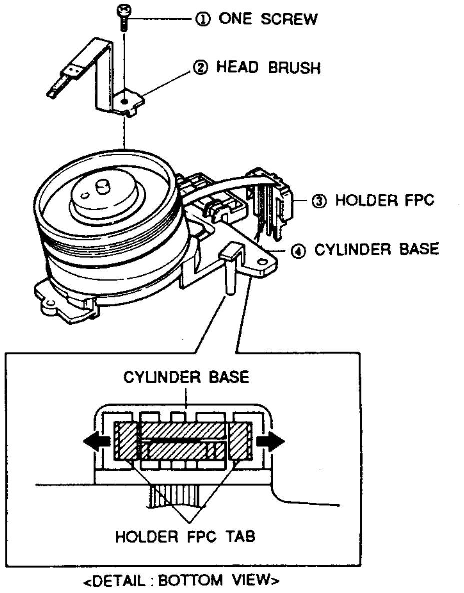

① ONE SCREW
② HEAD BRUSH
③ HOLDER FPC
④ CYLINDER BASE
CYLINDER BASE
HOLDER FPC TAB
<DETAIL : BOTTOM VIEW>

Fig. 13 Head Brush & Holder FPC Removal

3-6-5. Cylinder Ass'y Removal from Cylinder Base

1) Remove three(3) screws ① from the cylinder base ②.
2) Lift the cylinder ass'y ③ from the cylinder base ② in the direction of arrow.

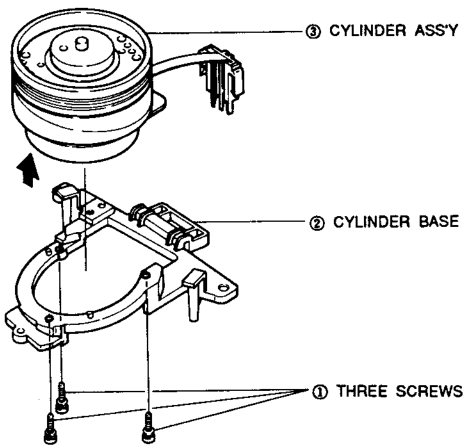

③ CYLINDER ASS'Y
② CYLINDER BASE
① THREE SCREWS

Fig. 14 Cylinder Ass'y Removal from Cylinder Base

3-6-6. Motor Rotor Removal

1) Remove two(2) screws ①.
2) Lift the retainer lever ass'y ② and the motor rotor ③.

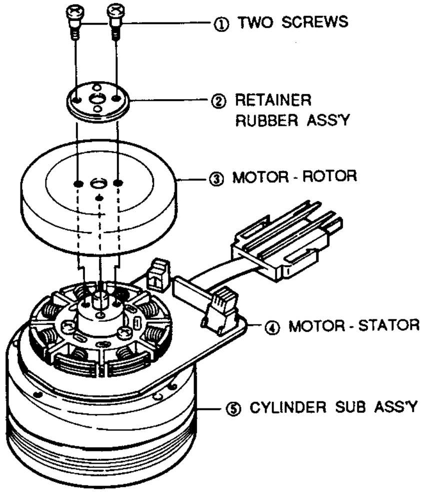

① TWO SCREWS
② RETAINER RUBBER ASS'Y
③ MOTOR - ROTOR
④ MOTOR - STATOR
⑤ CYLINDER SUB ASS'Y

Fig. 15 Motor Rotor Removal

3-6-7. Motor Rotor & Cylinder Sub Ass'y

1) Make sure that phase matching holes of the motor rotor & the cylinder sub ass'y are aligned correctly as shown in Fig. 16 . (Refer to phase matching hole)
2) Reinstall the retainer lever ass'y ② and secure with two(2) screws.

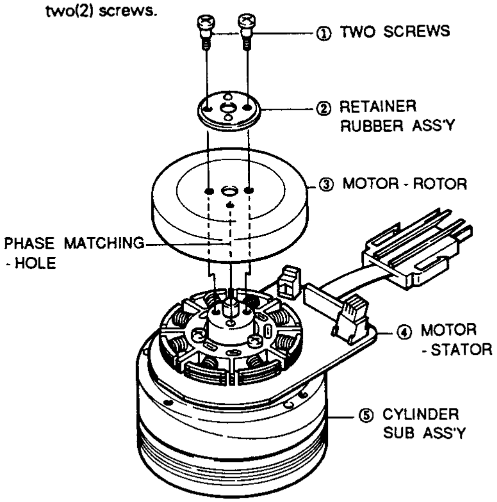

① TWO SCREWS
② RETAINER RUBBER ASS'Y
③ MOTOR - ROTOR
PHASE MATCHING - HOLE
④ MOTOR - STATOR
⑤ CYLINDER SUB ASS'Y

Fig. 16 Assembly of Motor Rotor & Cylinder Sub Ass'y

3-6-8. Motor Stator Removal

1) Remove three(3) screws ①.
2) Remove the motor stator ② from the cylinder sub ass'y ③.

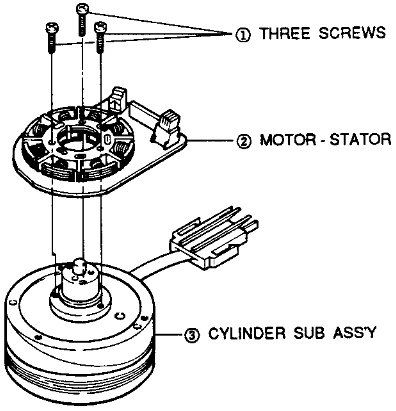

① THREE SCREWS
② MOTOR - STATOR
③ CYLINDER SUB ASS'Y

Fig. 17 Motor Stator Removal

3-6-9. Motor Stator & Cylinder Sub Ass'y

1) Reinstall the motor stator ① toward the FPC cable of cylinder sub ass'y ②.
2) Secure with three(3) screws. (Refer to Fig. 17)

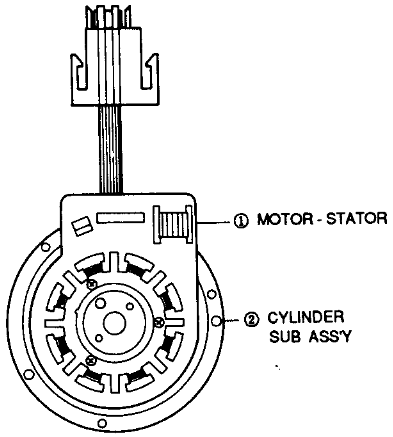

① MOTOR - STATOR
② CYLINDER SUB ASS'Y

Fig. 18 Assembly of Motor Stator & Cylinder Sub Ass'y

3-7. Main Deck Removal & Reassembly

3-7-1. Slide Rack Housing Removal

1) Lift the slide rack housing in the direction of arrow.

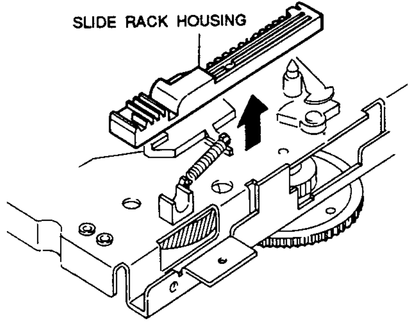

SLIDE RACK HOUSING

Fig. 19 Slide Rack Housing Removal

3-7-2. Assembly of Slide Rack Housing & Gear Master

1) Confirm that the hole of gear master ① and the hole "A" of main base are aligned correctly. (Eject mode)
2) Align the slot #1 of gear master ① with the tooth #1 of slide rack housing. (Refer to timing point)

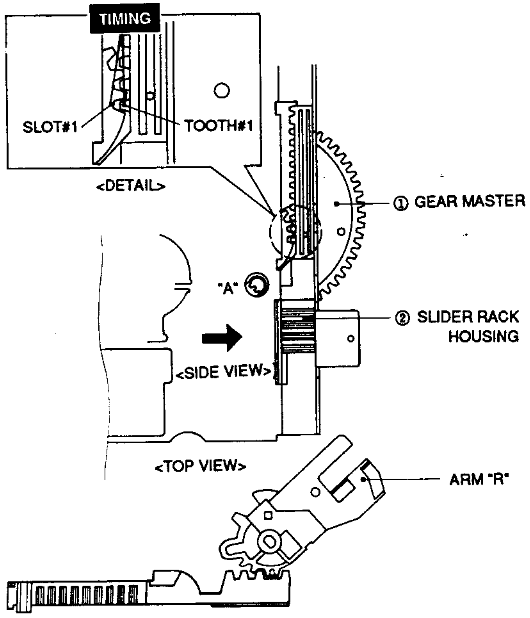

TIMING
SLOT#1
TOOTH#1
<DETAIL>
① GEAR MASTER
"A"
② SLIDER RACK HOUSING
<SIDE VIEW>
<TOP VIEW>
ARM "R"
<SIDE VIEW>

Fig. 20 Assembly of Slide Rack Housing & Gear Master

3-7-3. Brake Sub "L" Removal

1) Remove the spring brake sub "L" ①.
2) Release the tab ② in the direction of arrow. (Refer to detail drawing)
3) Lift the brake sub "L" ③.

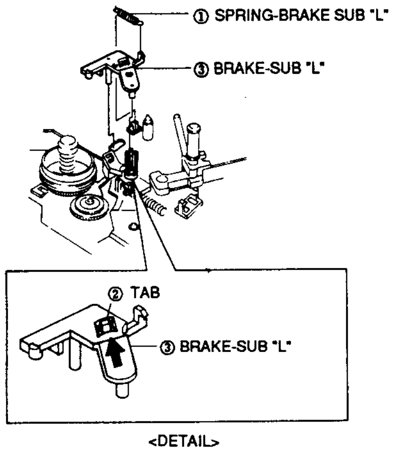

① SPRING-BRAKE SUB "L"
③ BRAKE-SUB "L"
② TAB
③ BRAKE-SUB "L"
<DETAIL>

Fig. 21 Brake Sub "L" Removal

3-7-4. Arm Tension Full Ass'y Removal

1) Remove the spring tension ①.
2) Release the tab ② in the direction of arrow. (Refer to detail drawing)
3) Lift the arm tension full ass'y ③.

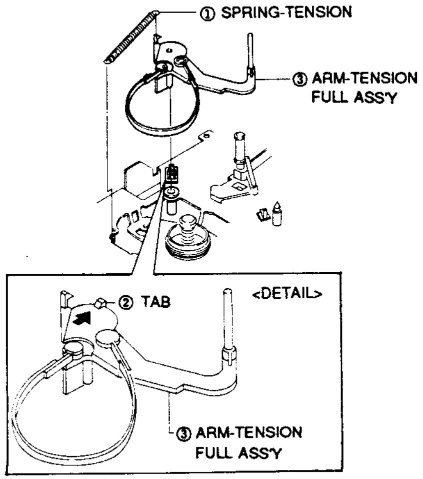

① SPRING-TENSION
③ ARM-TENSION FULL ASS'Y
② TAB
<DETAIL>
③ ARM-TENSION FULL ASS'Y

Fig. 22 Arm Tension Full Ass'y Removal

3-7-5. Reel Disk "L" Ass'y & Gear Relay "S" Ass'y Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the reel disk "L" ass'y ②.
3) Remove the washer plain ③.
4) Remove the washer slit ④.
5) Lift the gear relay "S" ass'y ⑤.

NOTE : When reinstalling, be sure to install the reel disk "L" ass'y ② after installing the washer plain ③.

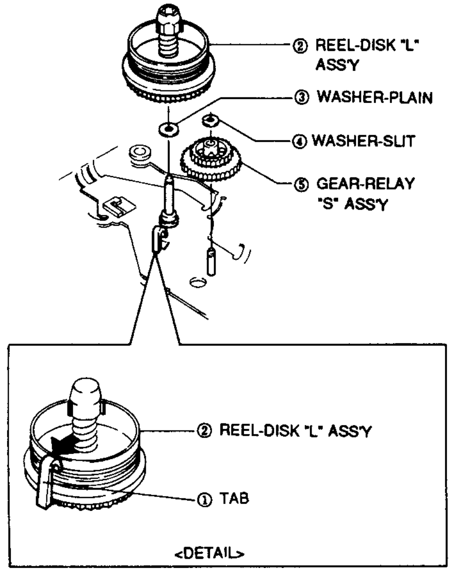

② REEL-DISK "L" ASS'Y
③ WASHER-PLAIN
④ WASHER-SLIT
⑤ GEAR-RELAY "S" ASS'Y
② REEL-DISK "L" ASS'Y
① TAB
<DETAIL>

Fig. 23 ReeL Disk "L" Ass'y & Gear Relay "S" Ass'y Removal

3-7-6. Brake Sub "R" Ass'y Removal

1) Remove the spring brake sub "R" ①.
2) Release the tab ② in the direction of arrow. (Refer to detail drawing)
3) Lift the brake sub "R" ass'y ③.

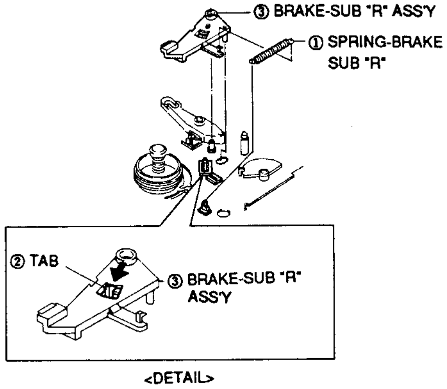

③ BRAKE-SUB "R" ASS'Y
① SPRING-BRAKE SUB "R"
② TAB
③ BRAKE-SUB "R" ASS'Y
<DETAIL>

Fig. 24 Brake Sub "R" Ass'y Removal

3-7-7. Reel Disk "R" Ass'y & Gear Relay "T" Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the reel disk "R" ass'y ②.
3) Remove the washer plain ③.
4) Remove the washer slit ④.
5) Lift the gear relay "T" ass'y ⑤.

NOTE : When reinstalling, be sure to install the reel disk "R" ass'y ② after installing the washer plain ③.

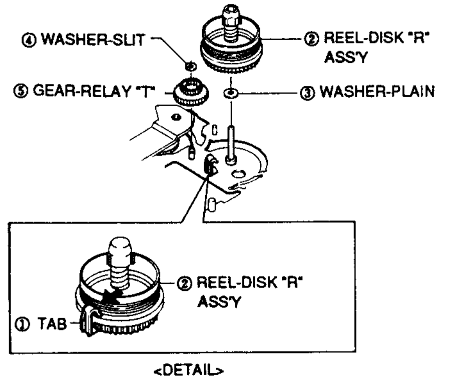

④ WASHER-SLIT
② REEL-DISK "R" ASS'Y
⑤ GEAR-RELAY "T"
③ WASHER-PLAIN
② REEL-DISK "R" ASS'Y
① TAB
<DETAIL>

Fig. 25 Reel Disk "R" Ass'y & Gear Relay "T" Removal

3-7-8. Brake Main "L", "R" Ass'y Removal

1) Remove the spring brake main ①.
2) Release the tab ② in the direction of arrow "A". (Refer to detail drawing "A")
3) Lift the brake main "L" ③.
4) Release the tab ④ in the direction of arrow "B". (Refer to detail drawing "B")
5) Lift the brake main "R" ⑤.

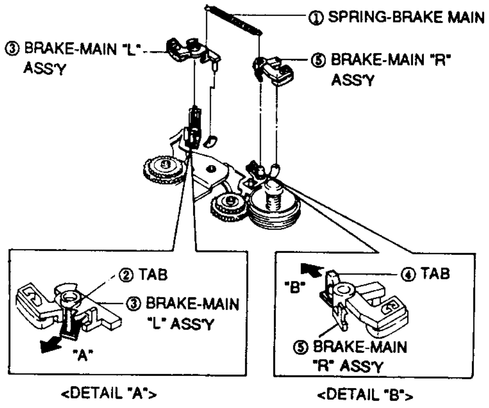

① SPRING-BRAKE MAIN
③ BRAKE-MAIN "L" ASS'Y
⑤ BRAKE-MAIN "R" ASS'Y
② TAB
③ BRAKE-MAIN "L" ASS'Y
"A"
"B"
④ TAB
⑤ BRAKE-MAIN "R" ASS'Y
<DETAIL "A">
<DETAIL "B">

Fig. 26 Brake Main "L", "R" Ass'y Removal

3-7-9. Idler Ass'y Removal

1) Remove the washer slit ①.
2) Lift the idler ass'y ②.

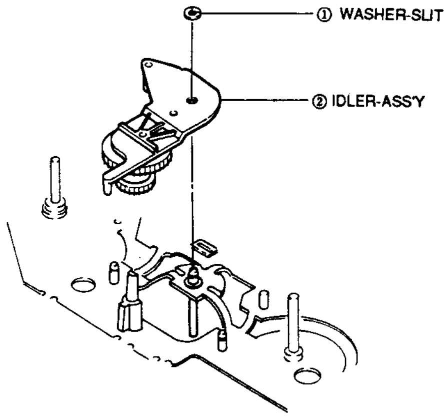

① WASHER-SLIT
② IDLER-ASS'Y

Fig. 27 Idler Ass'y Removal

3-7-10. Unit Pinch Roller Ass'y Removal

1) Remove the washer slit ①.
2) Lift the unit pinch roller ②.
3) Lift the spring arm pinch ③.

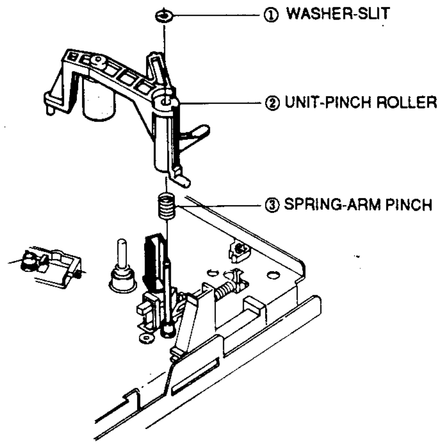

① WASHER-SLIT
② UNIT-PINCH ROLLER
③ SPRING-ARM PINCH

Fig. 28 Unit Pinch Roller Ass'y Removal

3-7-11. Assembly of Unit Pinch Roller

1) Install the unit pinch roller as shown in Fig. 29. (Refer to A, B)

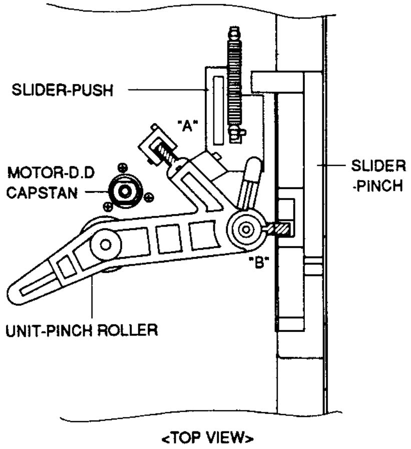

SLIDER-PUSH
"A"
MOTOR-D.D CAPSTAN
SLIDER -PINCH
"B"
UNIT-PINCH ROLLER
<TOP VIEW>

Fig. 29 Assembly of Unit Pinch Roller

3-7-12. Exploded View of Lever Pinch Comp Ass'y, Lever Pinch Cam, Arm Review Ass'y & Lever Review Ass'y

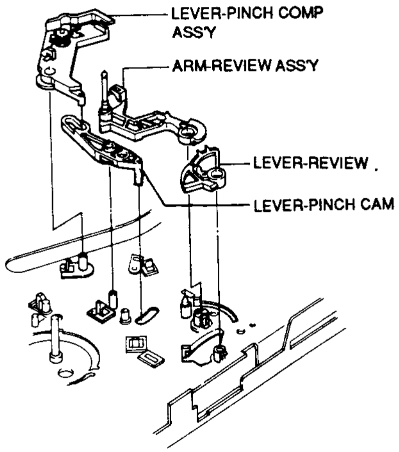

LEVER-PINCH COMP ASS'Y
ARM-REVIEW ASS'Y
LEVER-REVIEW
LEVER-PINCH CAM

Fig. 30 Exploded View of Lever Pinch Comp Ass'y, Lever Pinch Cam, Arm Review Ass'y & Lever Review Ass'y

3-7-13. Lever Pinch Comp Ass'y Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the lever pinch comp ass'y ②.

NOTE : Don't touch the lever pinch comp ass'y ① to audio head base during removal.

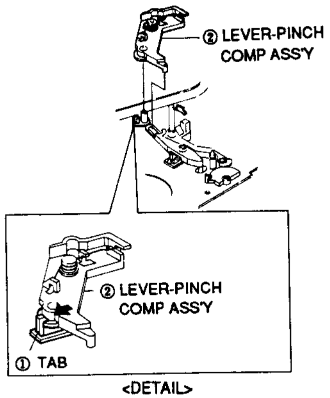

② LEVER-PINCH COMP ASS'Y
② LEVER-PINCH COMP ASS'Y
① TAB
<DETAIL>

Fig. 31 Lever Pinch Comp Ass'y Removal

3-7-14. Lever Pinch Cam Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the lever pinch cam ②.

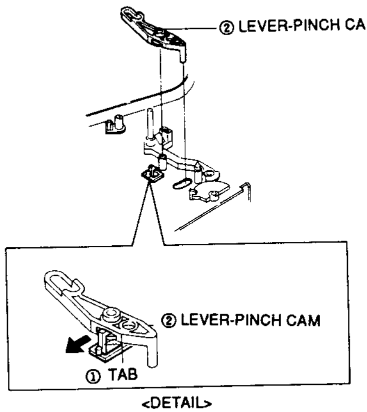

② LEVER-PINCH CAM
② LEVER-PINCH CAM
① TAB
<DETAIL>

Fig. 32 Lever Pinch Cam Removal

3-7-15. Arm Review Ass'y Removal

1) Push the stopper tab ① in the direction of arrow.
2) Pull the arm review ass'y ② in the direction of arrow "A" and then confirm "B". (Refer to detail drawing "A")
3) Release the tab ③ in the direction of arrow and then lift the arm review ass'y ②.

NOTE : Take extreme care not to damage when removing the arm review ass'y ②. (B part of detail drawing A)

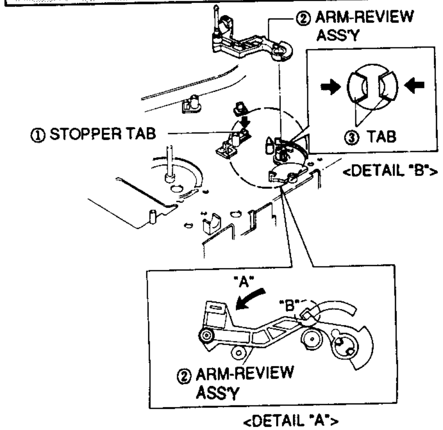

② ARM-REVIEW ASS'Y
① STOPPER TAB
③ TAB
<DETAIL "B">
"A"
"B"
② ARM-REVIEW ASS'Y
<DETAIL "A">

Fig. 33 Arm Review Ass'y Removal

3-7-16. Lever Review Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the lever review ②.

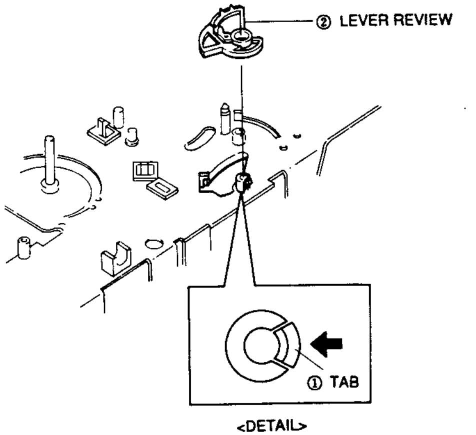

② LEVER REVIEW
① TAB
<DETAIL>

Fig. 34 Lever Review Removal

3-7-17. Belt Capstan Removal

1) Remove the belt capstan ①.

NOTE : Take extreme care not to touch the grease when removing or reinstalling.

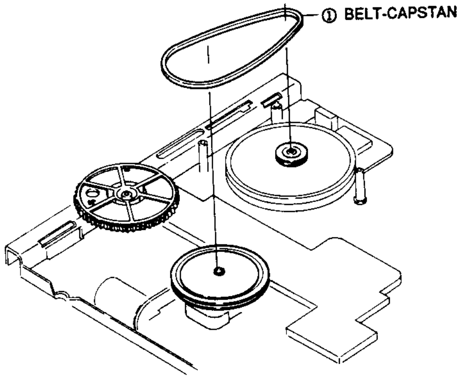

① BELT-CAPSTAN

Fig. 35 Belt Capstan Removal

3-7-18. Brake Capstan Ass'y Removal

1) Remove the spring brake capstan ①.
2) Release the tab ② in the direction of arrow. (Refer to detail drawing)
3) Lift the brake capstan ass'y ③.

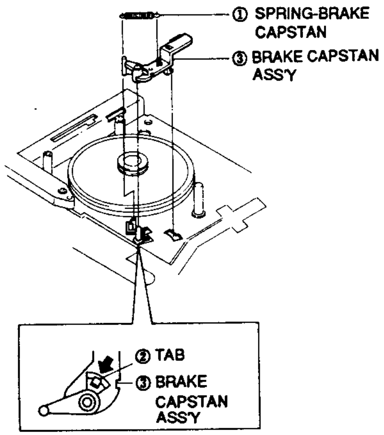

① SPRING-BRAKE CAPSTAN
③ BRAKE CAPSTAN ASS'Y
② TAB
③ BRAKE CAPSTAN ASS'Y
<DETAIL>

Fig. 36 Brake Capstan Ass'y Removal

3-7-19. Motor D.D Capstan Removal

1) Remove three(3) screws ①. (Top view)
2) Lift the motor D.D capstan ② in the direction of arrow. (Bottom view)

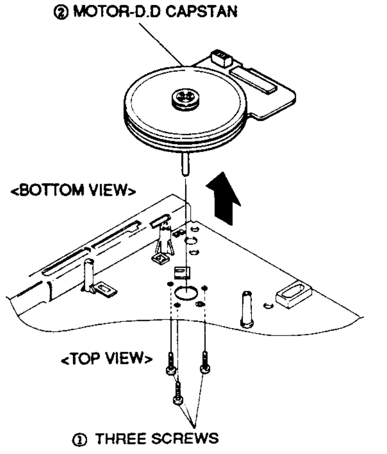

② MOTOR-D.D CAPSTAN
<BOTTOM VIEW>
<TOP VIEW>
① THREE SCREWS

Fig. 37 Motor D.D Capstan Removal

3-7-20. Clutch Ass'y Removal

1) Remove the washer slit ①.
2) Lift the clutch ass'y ②.
3) Remove the washer plain ③.

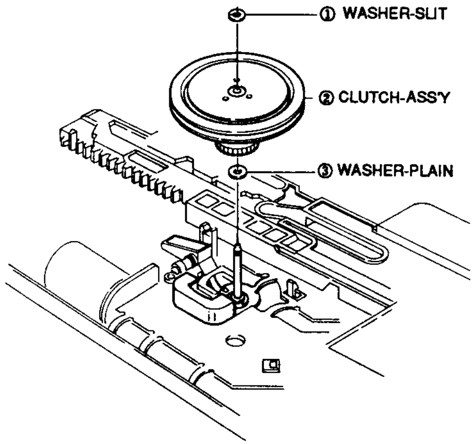

① WASHER-SLIT
② CLUTCH-ASS'Y
③ WASHER-PLAIN

Fig.38 Clutch Ass'y Removal

3-7-21. Gear Master Removal

1) Remove the washer slit ①.
2) Lift the gear master ②.

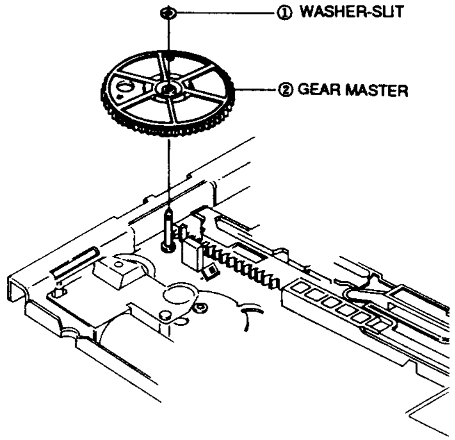

① WASHER-SLIT
② GEAR MASTER

Fig. 39 Gear Master Removal

3-7-22. Assembly of Gear Master

1) When reinstalling, be sure to align the arrow mark of gear master ① with gear home of gear worm wheel ②. (Refer to timing point)

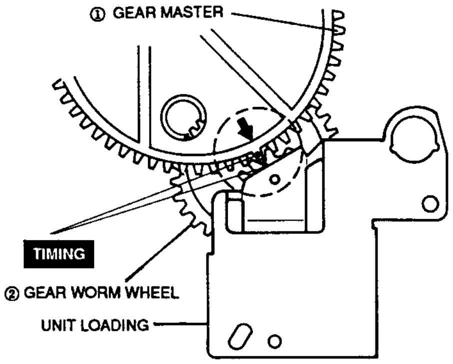

① GEAR MASTER
TIMING
② GEAR WORM WHEEL
UNIT LOADING

Fig. 40 Assembly of Gear Master

3-7-23. Unit Loading Removal

1) Remove two(2) screws ①.
2) Lift the unit loading ② in the direction of arrow.

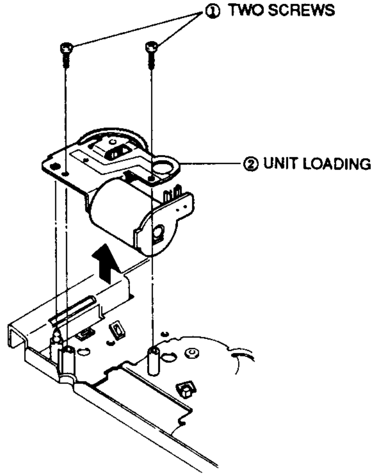

① TWO SCREWS
② UNIT LOADING

Fig. 41 Unit Loading Removal

3-7-24. Lever Slide Pinch Removal

1) Remove the washer slit ①.
2) Lift the lever slide pinch ②.

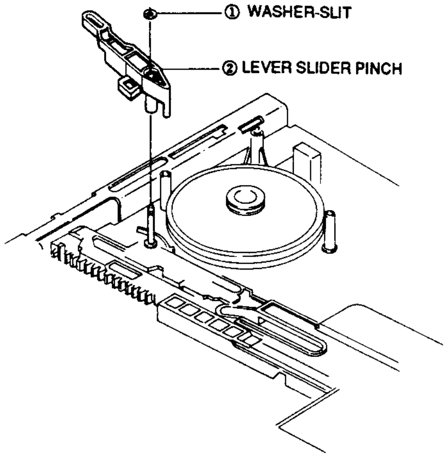

① WASHER-SLIT
② LEVER SLIDER PINCH

Fig. 42 Lever Slide Pinch Removal

3-7-25. Assembly of Lever Slide Pinch

1) Pull the slide pinch ① to the end in the direction of arrow.
2) Insert the slide pinch ① into the hole of lever slide pinch ②. (Refer to 'A' part)

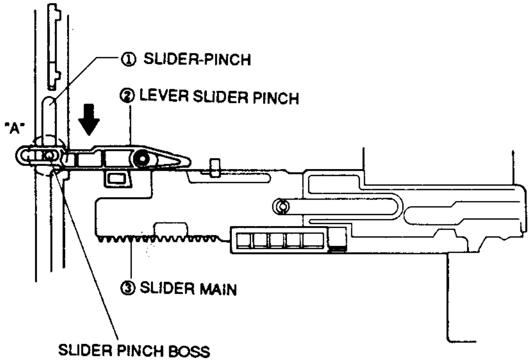

① SLIDER-PINCH
② LEVER SLIDER PINCH
"A"
③ SLIDER MAIN
SLIDER PINCH BOSS

Fig. 43 Assembly of Lever Slide Pinch

3-7-26. Slide Main Removal

1) Remove the washer slit ①.
2) Release three(3) tabs ②, ③, ④ in the direction of arrow.
3) Lift the slide main ⑤.

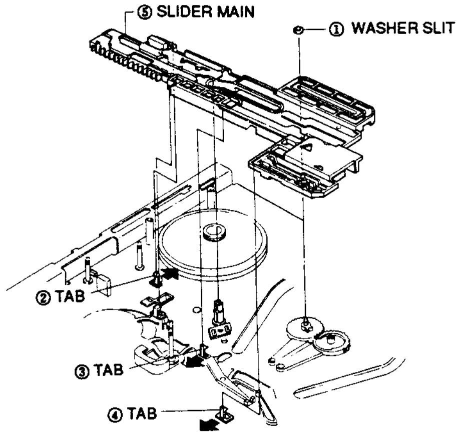

⑤ SLIDER MAIN
① WASHER SLIT
② TAB
③ TAB
④ TAB

Fig. 44 Slide Main Removal

3-7-27. Assembly of Slide Main

1) Install the shaft of gear loading "R" ass'y into the left of the main slide hole and secure with the washer slit ②. (Refer to "A")
2) Insert the lever tension control ③ and the lever idler change ④ into the slide main hole. (Refer to "B")
3) After confirming the above items 1), 2) install the slide main and secure with tabs (a, b, c).

> NOTE : Be sure to assemble the slide main when the gear loading L/R ass'y is in unloading position.

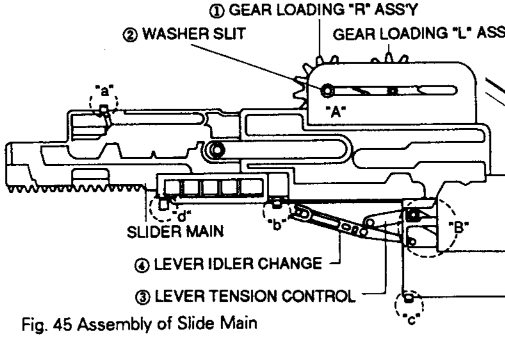

① GEAR LOADING "R" ASS'Y
② WASHER SLIT
GEAR LOADING "L" ASS'Y
"a"
"A"
"d"
"b"
"B"
"c"
SLIDER MAIN
④ LEVER IDLER CHANGE
③ LEVER TENSION CONTROL

Fig. 45 Assembly of Slide Main

3-7-28. Lever Shift Ass'y Removal

1) Hang the spring lever shift ① to the claw of the lever shift ③. (Refer to detail drawings "A", "B")
2) Release the tab ② in the direction of arrow.
3) Lift the lever shift ③.

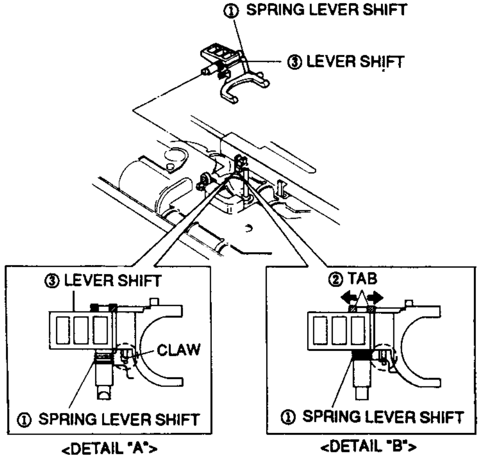

① SPRING LEVER SHIFT
③ LEVER SHIFT
③ LEVER SHIFT
CLAW
① SPRING LEVER SHIFT
<DETAIL "A">
② TAB
① SPRING LEVER SHIFT
<DETAIL "B">

Fig. 46 Lever Shift Ass'y Removal

3-7-29. Lever Idler Change Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the lever idler change ②.

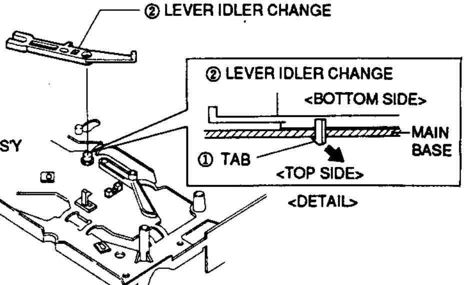
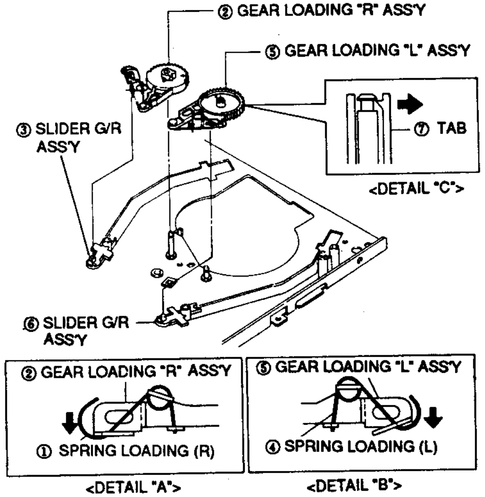

② LEVER IDLER CHANGE
② LEVER IDLER CHANGE
<BOTTOM SIDE>
MAIN BASE
① TAB
<TOP SIDE>
<DETAIL>

Fig. 47 Lever Idler Change Removal

3-7-30. Gear Loading "L", "R" Ass'y Removal

1) Remove the gear loading "R" ass'y ② from the slide guide roller "T" ③ by pushing the spring loading "R" ① in the direction of arrow. (Refer to detail drawing "A")
2) Remove the gear loading "L" ass'y ⑤ from the slide guide roller "S" ⑥ by pushing the spring loading "L" ④ in the direction of arrow. (Refer to detail drawing "B")
3) Lift the gear loading "R" ass'y ②.
4) Lift the gear loading "L" ass'y ⑤ by pushing the tab ⑦ of the gear loading "L" ass'y ⑤. (Refer to detail drawing "C")


② GEAR LOADING "R" ASS'Y
⑤ GEAR LOADING "L" ASS'Y
⑦ TAB
<DETAIL "C">
③ SLIDER G/R ASS'Y
⑥ SLIDER G/R ASS'Y
② GEAR LOADING "R" ASS'Y
① SPRING LOADING (R)
<DETAIL "A">
⑤ GEAR LOADING "L" ASS'Y
④ SPRING LOADING (L)
<DETAIL "B">

3-7-31. Gear Loading "L", "R" Ass'y

1) When reinstalling, be sure to align two arrows as shown in Fig. 49. (Refer to timing point)

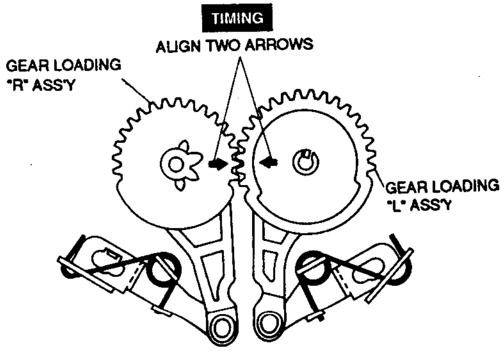

TIMING
ALIGN TWO ARROWS
GEAR LOADING "R" ASS'Y
GEAR LOADING "L" ASS'Y

Fig. 49 Assembly of Gear Loading "L", "R" Ass'y

3-7-32. Slide Pinch Removal

1) Push the tab ① in the direction of arrow "A". (Refer to detail drawing)
2) Lift the slide pinch ② in the direction of arrow "B".

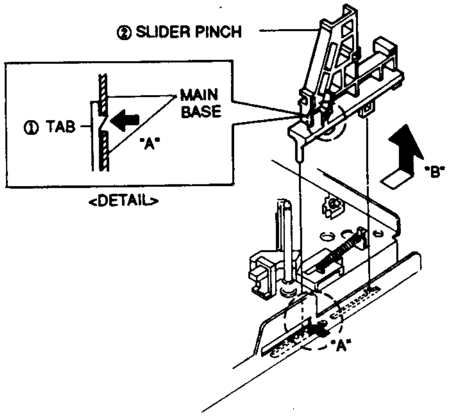

② SLIDER PINCH
① TAB
MAIN BASE
"A"
<DETAIL>
"B"
"A"

Fig. 50 Slide Pinch Removal

3-7-33. Slide Push Removal

1) Remove the spring slide push ①.
2) Push the slide push ② in the direction of arrow "A".
3) Lift the slide push ② by pushing the tab ③ in the direction of arrow "B". (Refer to detail drawing)

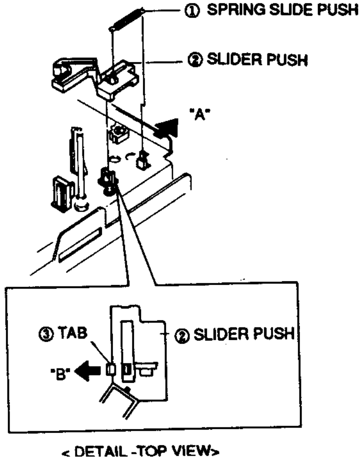
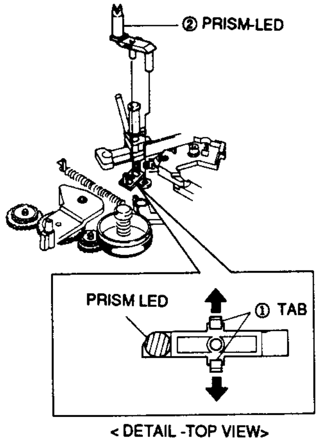

① SPRING SLIDE PUSH
② SLIDER PUSH
"A"
③ TAB
② SLIDER PUSH
"B"
< DETAIL -TOP VIEW>

Fig. 51 Slide Push Removal

3-7-34. Prism LED Removal

1) Release the tab ① in the direction of arrow. (Refer to detail drawing)
2) Lift the prism LED ②.

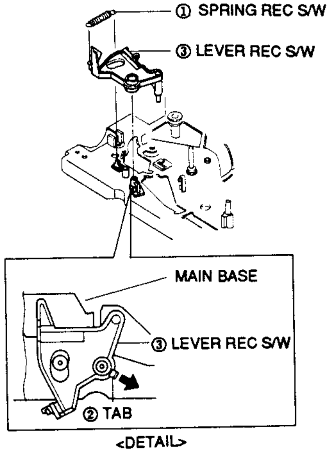


② PRISM-LED
PRISM LED
① TAB
< DETAIL -TOP VIEW>

Fig. 52 Prism LED Removal

3-7-35. Lever Record Switch Removal

1) Remove the spring record switch ①.
2) Release the tab ② in the direction of arrow. (Refer to detail drawing)
3) Lift the lever record switch ③.

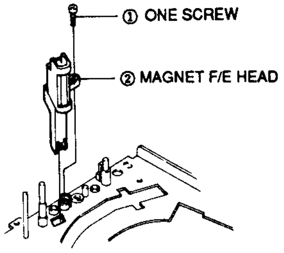


① SPRING REC S/W
③ LEVER REC S/W
MAIN BASE
③ LEVER REC S/W
② TAB
<DETAIL>

Fig. 53 Lever Record Switch Removal

3-7-36. Full Erase Head Removal

1) Remove one(1) screw ①.
2) Lift the magnet F/E head ②.



① ONE SCREW
② MAGNET F/E HEAD

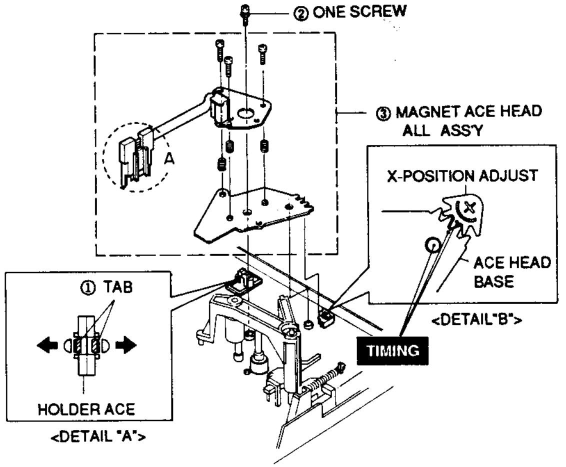
Fig. 54 Full Erase Head Removal

3-7-37. ACE Head Removal & Reassembly

1) Release the tab ① holding holder ACE toward arrows. (Refer to detail drawing "A")
2) Remove one(1) screw ②.
3) Lift the magnet ACE head ass'y ③.

Assembly : When reinstalling, be sure to align the three teeth of X-Position adjustment gear with the two slot of ACE head base.

NOTE : When adjusting the X-position adjustment gear using (+) driver, do not adjust by force.

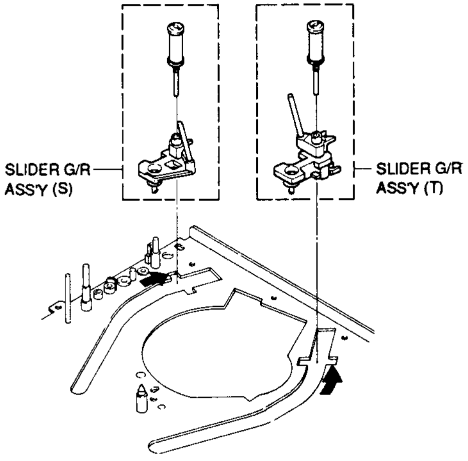


② ONE SCREW
A
③ MAGNET ACE HEAD ALL ASS'Y
X-POSITION ADJUST
ACE HEAD BASE
<DETAIL"B">
TIMING
① TAB
HOLDER ACE
<DETAIL "A">

Fig. 55 ACE Head Ass'y Removal & Reassembly

3-7-38. Slide Guide Roller "S", "T" Ass'y Removal

1) Remove the cylinder ass'y from the main base. (Refer to Fig. 11, 12)
2) Remove the slide "S", "T" from the gear loading "L", "R" ass'y. (Refer to Fig. 48)
3) Move the guide roller "S", "T" ass'y to slot and then lift it to remove. (Refer to arrow)

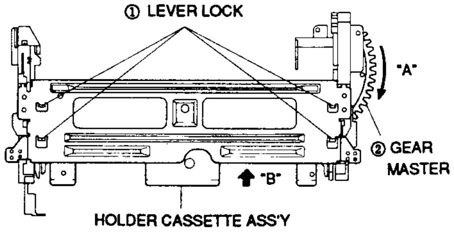


SLIDER G/R ASS'Y (S)
SLIDER G/R ASS'Y (T)

Fig. 56 Slide Guide Roller "S", "T" Ass'y Removal

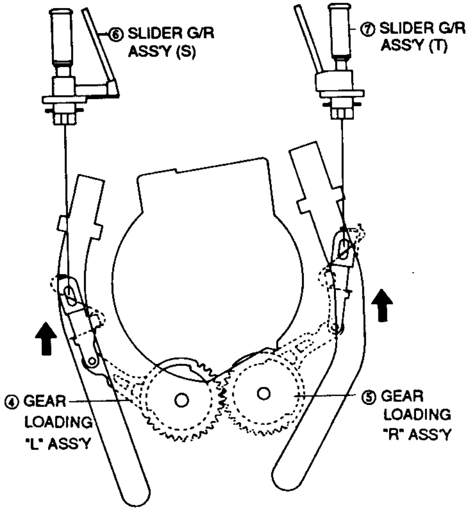
3-7-39. *Slide Guide Roller "S", "T" Ass'y* (When all parts except the cylinder assembly are removed.)

1) Push four(4) Lever Locks ① of the housing ass'y Simultaneously. (Refer to Fig. 57)
2) Push the holder cassette ass'y ③ toward arrow "B" while turning the gear master ② toward arrow "A". (Refer to Fig. 57)
3) Load the gear loading L, R ass'y ④, ⑤ to the middle position of guide rail by turning the gear master ② toward arrow "A". (Refer to Fig. 57, 58)
4) Install the slide guide roller S, T ⑥, ⑦ into rail slot and then move it to the position of gear loading L, R ass'y ④, ⑤. (Refer to Fig. 58)
5) Turn the gear master ② toward arrow "A". (Eject mode)



① LEVER LOCK
"A"
② GEAR MASTER
"B"
HOLDER CASSETTE ASS'Y

Fig. 57 How to operate the Housing Ass'y



⑥ SLIDER G/R ASS'Y (S)
⑦ SLIDER G/R ASS'Y (T)
④ GEAR LOADING "L" ASS'Y
⑤ GEAR LOADING "R" ASS'Y

Fig. 58 Assembly of Slide Guide Roller "S", "T" Ass'y

3-8. CLEANING AND LUBRICATION

3-8-1. CLEANING TAPE MECHANISM

Periodic cleaning is necessary to insure continued excellent performance of the tape mechanism. To clean the following parts, patch and solvent are available.

1. Capstan shaft.
2. All tape guide posts.
3. Clutch pulley.
4. Pinch roller.
5. Belt capstan.
6. Capstan motor pulley.

3-8-2. CLEANING OF ROTATING & STATIONARY HEADS

To clean video heads, full erase head, and the audio/control (A/C) head we recommend using a head cleaning kit and solvent.

NOTE : When cleaning video heads, move the cleaning stick in the direction of head rotation (wiping in a vertical direction may damage the heads.).

Press a chamois cloth which has been dipped in cleaning fluid lightly against the rotating cylinder assembly. Clean slowly by rotating the upper cylinder ass'y by hand.

NOTE : Never turn the motor on when cleaning.

3-8-3. LUBRICATION OF TAPE MECHANISM

The tape transport mechanism is properly lubricated at the factory.
In normal use cycles, and with average environmental conditions, additional lubrication should not be required during the first year of operation.

Depending on the frequency of use and environmental conditions, periodic lubrication may be required.
When lubricating, remove the old lubricant first, then sparingly apply new lubricant. (Excessive lubricant may be transferred to other assemblies causing malfunction).

Use grease on the following parts every 1,000 hours of operation. (See exploded view for location);

1. Between base pole assembly (L, R) and main base.
2. Gear loading L, R.
3. Slide main.
4. Lever shift.
5. Gear master.
6. Lever slider pinch.
7. Pinch roller.
8. Slide pinch.
9. Base cylinder.

Oil may be required for the following parts after 1,000 hours of operation. (See exploded view for location);

Main base
1. Arm tension molding.
2. Shaft reel disk L, R.
3. Shaft gear relay S, T.
4. Shaft idler
5. Shaft clutch

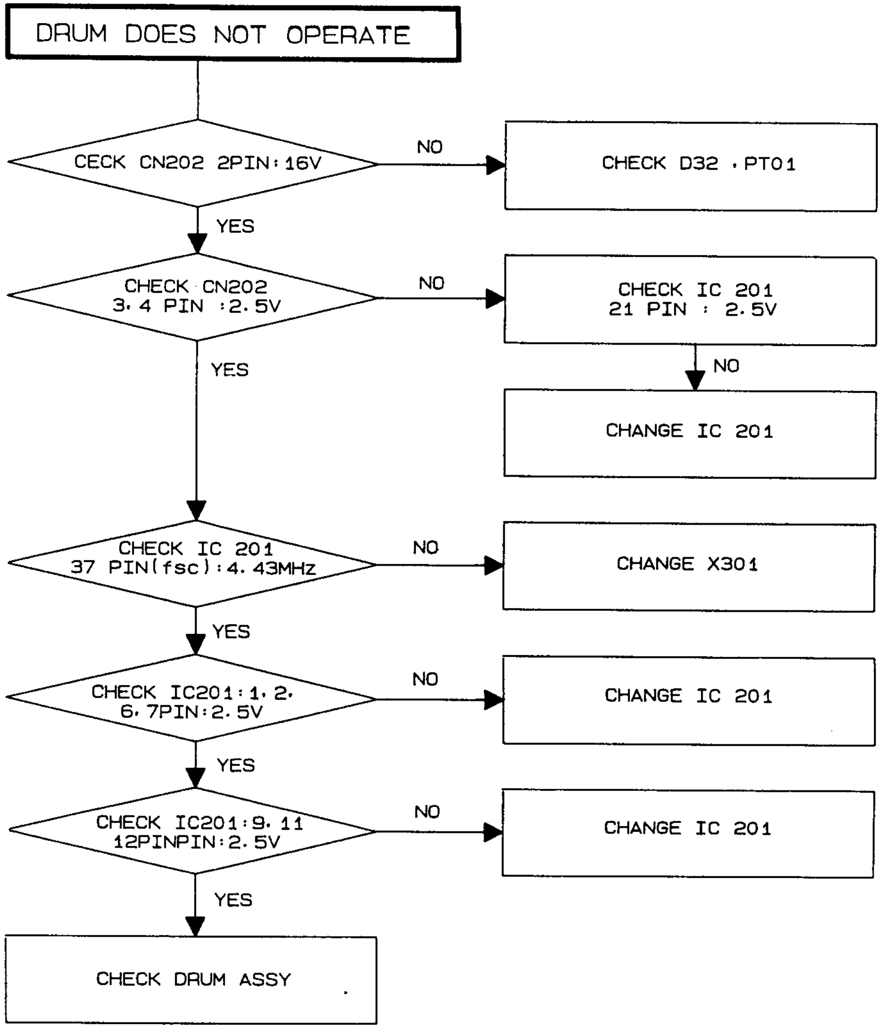
Other parts which are not listed above do not require lubrication, except when parts are replaced.
Use appropriate oil or grease as indicated on the exploded view.

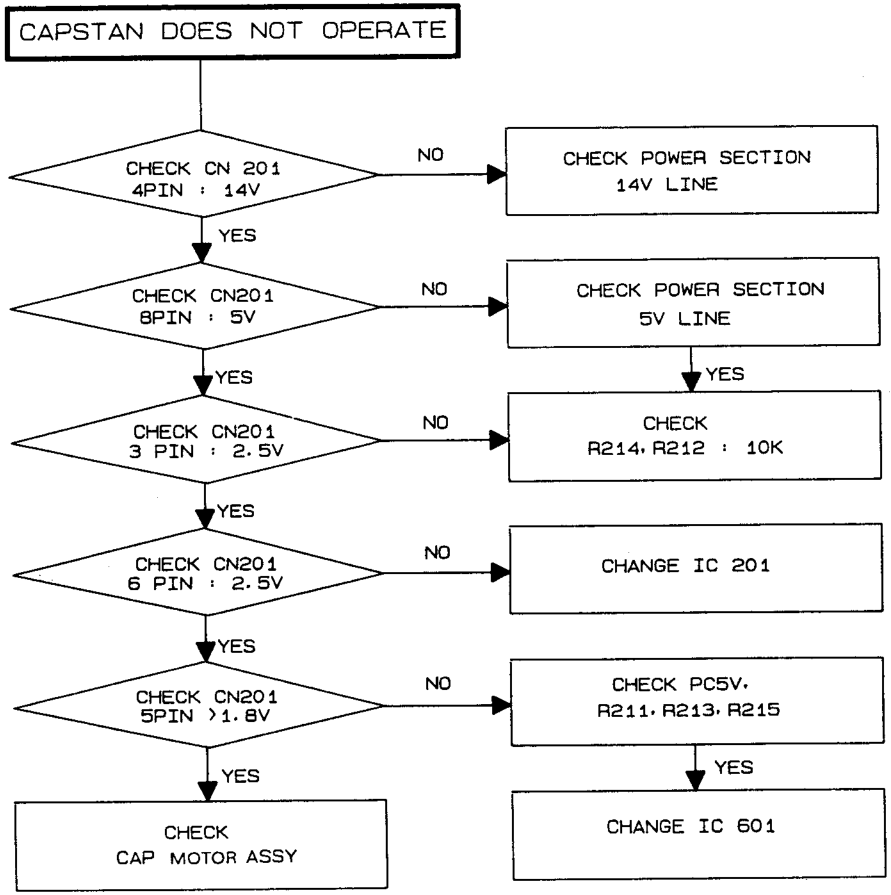
4. ABBREVIATIONS

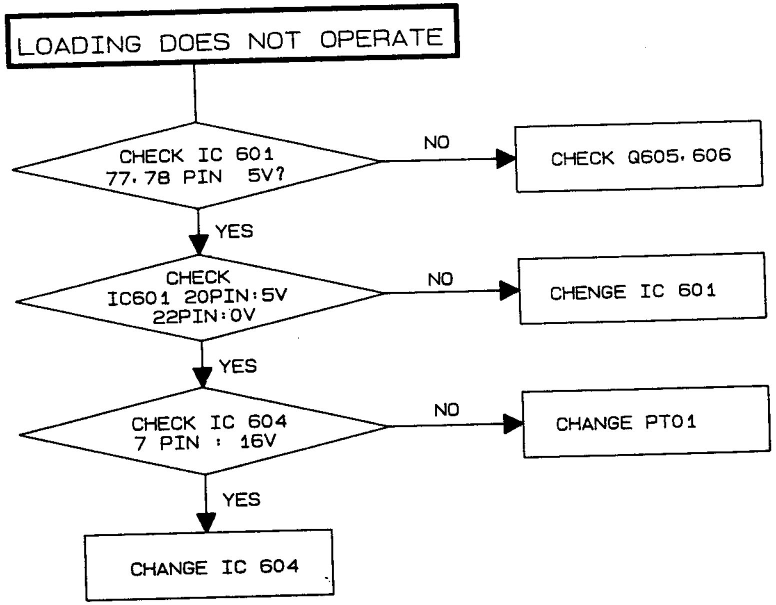
ABBREVIATION	EXPLANATION
ACC	Automatic Color Control
ACE	Audio Control Erase
ACK	Automatic Color Killer
ADJ	Adjustment
A/D	Analog/Digital
AE	Auto Exposure
AF	Auto Focus
AFC	Automatic Frequency Control
AFM	Audio Frequency Modulation
AGC	Automatic Gain Control
AMP	Amplifier
APC	Automatic Pedestal Control
ASS'Y	Assembly
ATF	Automatic Track Finding
ATT	Attenuator
AUTO	Automatic
AUX	Auxiliary
BATT	Battery
BF	Burst Flag
BFG	Burst Flag Gate
BLC	Back Light Compensation
BLK	Black
BPF	Band Pass Filter
BUFF	Buffer
B/W	Black/White
CAM	Camera
CAMCORDER	Camera Recorder
CAP	Capstan
CAR	Carrier
CASS	Cassette
CBA	Circuit Board Assembly
CCD	Charge Coupled Device
CH	Channel
CHROMA or C	Chrominance
CLK	Clock
CLP	Clamp
CM	Capstan Motor
CN	Connector
CNR	Chroma Noise Reduction
COM	Common
COMB	Comb Filter
COMP	Composite
CRT	Cathode Ray Tube
CS	Chip Selector
CTL	Control
D/A	Digital/Analog
dB	Decibel (Measurement Unit)
DC	Direct Current
DD	Direct Drive
DEMOD	Demodulator
DET	Detect
DL	Delay Line
DOC	Drop Out Compensater
DY	Deflection Yoke
E-E	Electronic to Electronic
EMP	Emphasis
ENV	Envelope
EQ	Equalizer
EXT	External
EVF	Electronic View Finder
F/E	Flying Erase
FET	Field Effect Transistor
FF	Fast Forward, Flip-Flop
FG	Frequency Generator
FL	Filter
FM	Frequency Modulation
FPC	Flexible Pattern Circuit
FPS	Forward Picture Search
Freq.	Frequency
FSC	Frequency Sub Carrier
FWD	Forward
GC	Gain Control
GEN	Generator
GND	Ground
GRN	Green
GRY	Gray
HD	Head, Horizontal Drive
HG	Hall Generator
HPF	High Pass Filter
Hz	Hertz
IC	Integrated Circuit
IR	Infrared
INT	Interrupter
I/O	Input/Output
IRE	Institute of Radio Engineers
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LM	Loading Motor
LP	Long Play
LPF	Low Pass Filter
MAX	Maximum
M/F	Manual Focus
MIC	Microphone
MIN	Minimum

ABBREVIATION	EXPLANATION
MIX	Mixer
MODED	Modulator-Demodulator
MTX	Matrix
NC	Not Connected
NR	Noise Reduction
NOR	Normal
OFD	Overflow Drain
OP AMP	Operational Amplifier
OSC	Oscillator
PB	Play Back
PCM	Pulse Coded Modulation
PDC	Programme Delievery Control
PG	Pulse Generator
PLA	Programmable Logic Array
PLL	Phase Locked Loop
P-P	Peak to Peak
PRE-AMP	Pre-Amplifier
P/S	Pause/Still
PWM	Pulse Width Modulation
PWR	Power
RAM	Random Access Memory
REC	Recording
REF	Reference
REG	Regulator
REV	Reverse
REW	Rewind
RF	Radio Frequency
RG	Reset Gate
ROM	Read Only Memory
RST	Reset
RPS	Reverse Picture Search
SCK	Serial Clock
SFG	Supply FG
SHD	Sample Hold Data
SHP	Sample Hold Precharge
SHP	Sharpness
SI	Serial Data Input
SO	Serial Data Output
SP	Standard Play
SN	Signal to Noise Ratio
STB	Strobe
S/W	Switch
SYNC	Synchronization
SYSCON	System Control
TP	Test Point
TR	Transistor
TRK	Tracking
UL	Unloading
UNREG	Unregulated
u-COM	Microprocessor
VCO	Voltage Control Oscillator
VCR	Video Cassette Recorder
VR	Variable Resistor
V-SYNC	Vertical-sync.
VXO	Variable Crystal Oscillator
W/B	White Balance
X-TAL	Crystal
Y/C	Luminance/Chrominance
4.43MHz	Color Sub Carrier

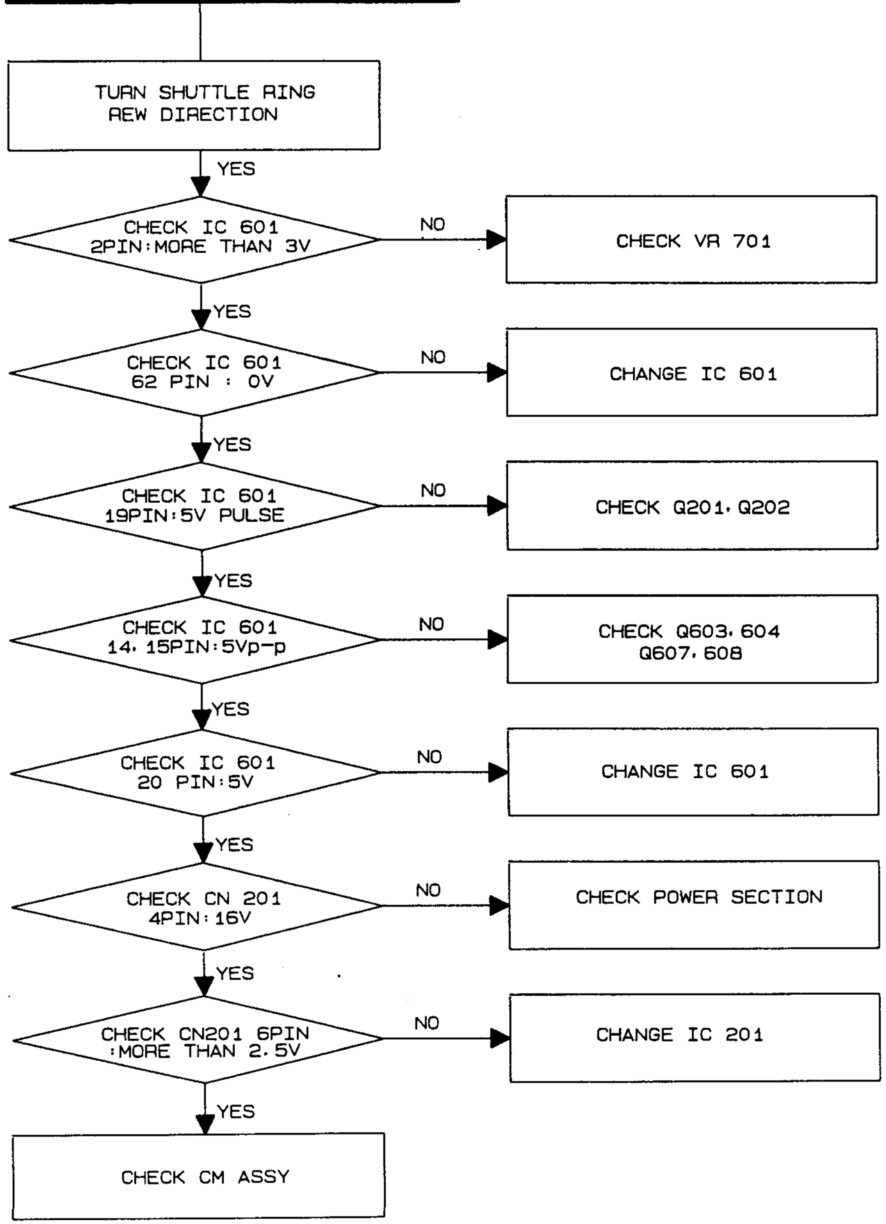
5. TROUBLESHOOTING


DRUM DOES NOT OPERATE
CECK CN202 2PIN:16V
NO
CHECK D32 , PT01
YES
CHECK CN202 3, 4 PIN :2. 5V
NO
CHECK IC 201 21 PIN : 2. 5V
NO
CHANGE IC 201
YES
CHECK IC 201 37 PIN(fsc):4. 43MHz
NO
CHANGE X301
YES
CHECK IC201:1, 2, 6, 7PIN:2. 5V
NO
CHANGE IC 201
YES
CHECK IC201:9, 11 12PINPIN:2. 5V
NO
CHANGE IC 201
YES
CHECK DRUM ASSY

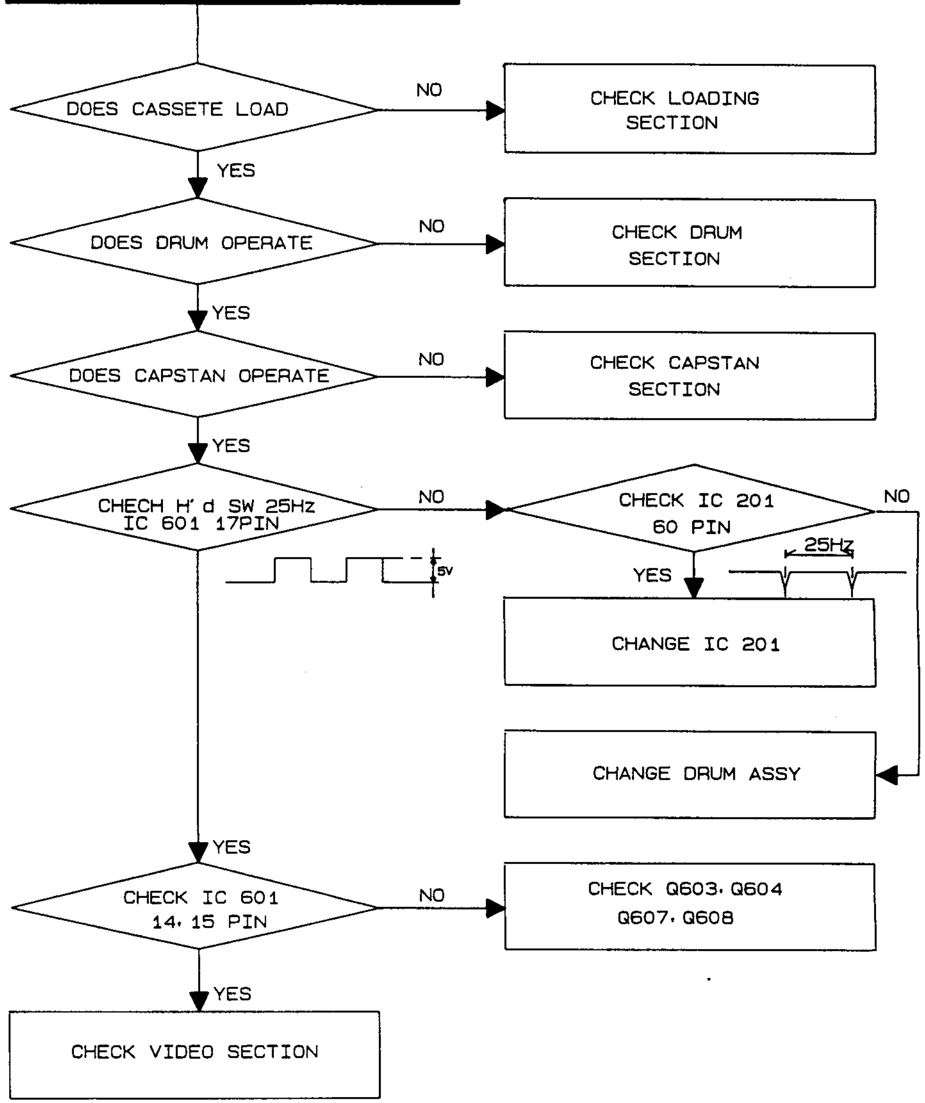

CAPSTAN DOES NOT OPERATE
CHECK CN 201
4PIN : 14V
NO
CHECK POWER SECTION
14V LINE
YES
CHECK CN201
8PIN : 5V
NO
CHECK POWER SECTION
5V LINE
YES
YES
CHECK CN201
3 PIN : 2.5V
NO
CHECK
R214, R212 : 10K
YES
CHECK CN201
6 PIN : 2.5V
NO
CHANGE IC 201
YES
CHECK CN201
5PIN >1.8V
NO
CHECK PC5V,
R211, R213, R215
YES
YES
CHECK
CAP MOTOR ASSY
CHANGE IC 601


LOADING DOES NOT OPERATE
CHECK IC 601
77, 78 PIN 5V?
NO
CHECK Q605, 606
YES
CHECK
IC601 20PIN:5V
22PIN:0V
NO
CHENGE IC 601
YES
CHECK IC 604
7 PIN : 16V
NO
CHANGE PT01
YES
CHANGE IC 604

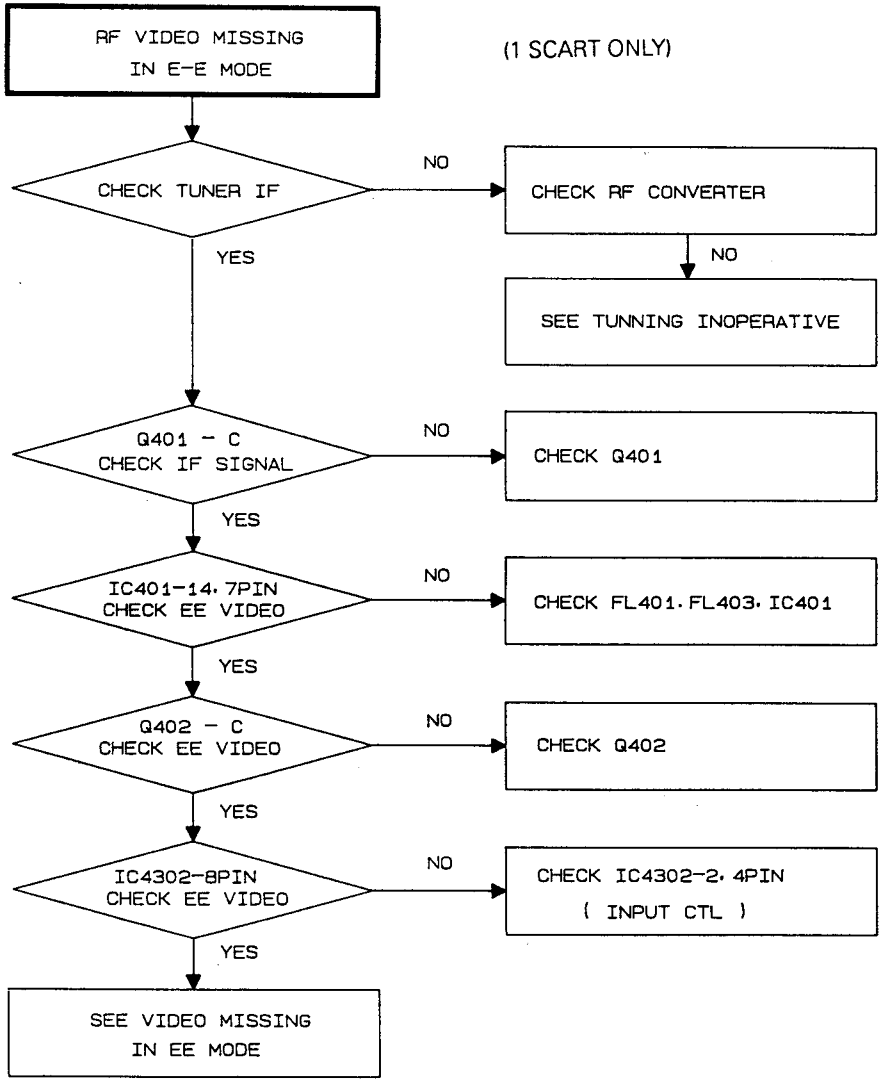
NO HIGH SPEED REW


TURN SHUTTLE RING
REW DIRECTION
YES
CHECK IC 601
2PIN:MORE THAN 3V
NO
CHECK VR 701
YES
CHECK IC 601
62 PIN : 0V
NO
CHANGE IC 601
YES
CHECK IC 601
19PIN:5V PULSE
NO
CHECK Q201, Q202
YES
CHECK IC 601
14, 15PIN:5Vp-p
NO
CHECK Q603, 604
Q607, 608
YES
CHECK IC 601
20 PIN:5V
NO
CHANGE IC 601
YES
CHECK CN 201
4PIN:16V
NO
CHECK POWER SECTION
YES
CHECK CN201 6PIN
:MORE THAN 2.5V
NO
CHANGE IC 201
YES
CHECK CM ASSY

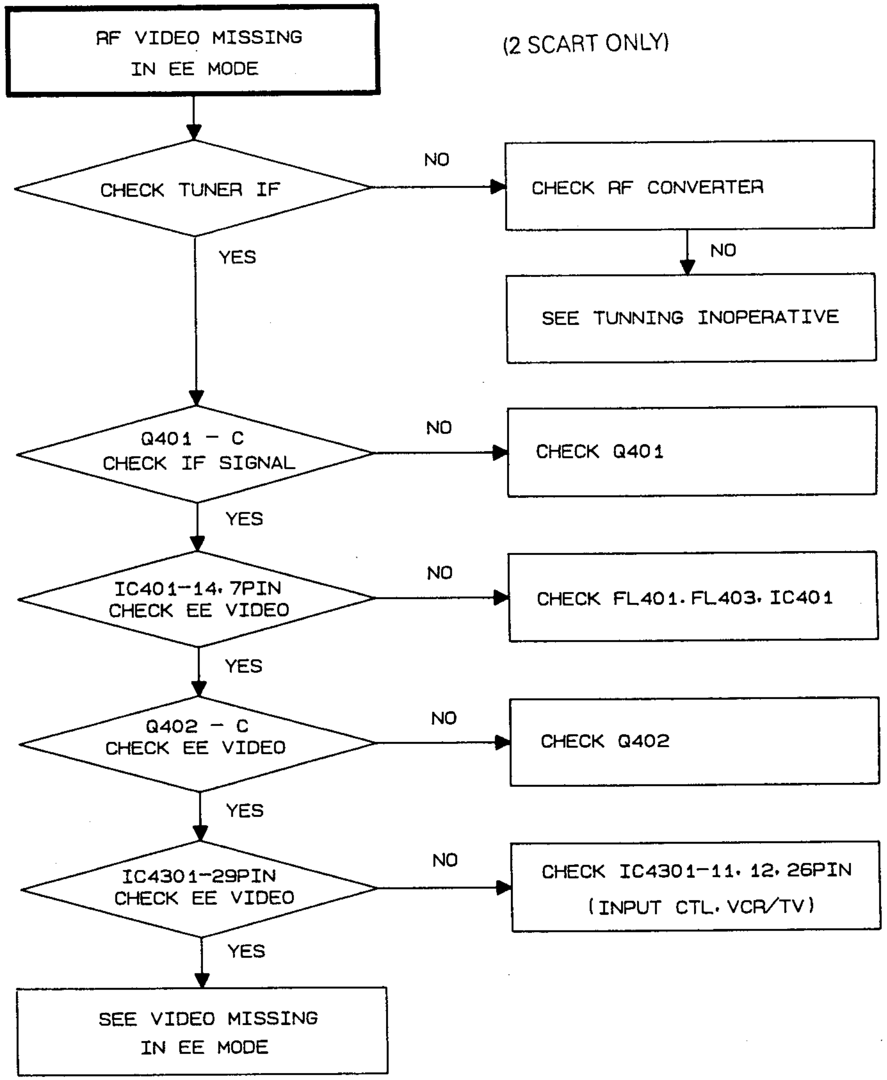
PLAY DOES NOT OPERATE

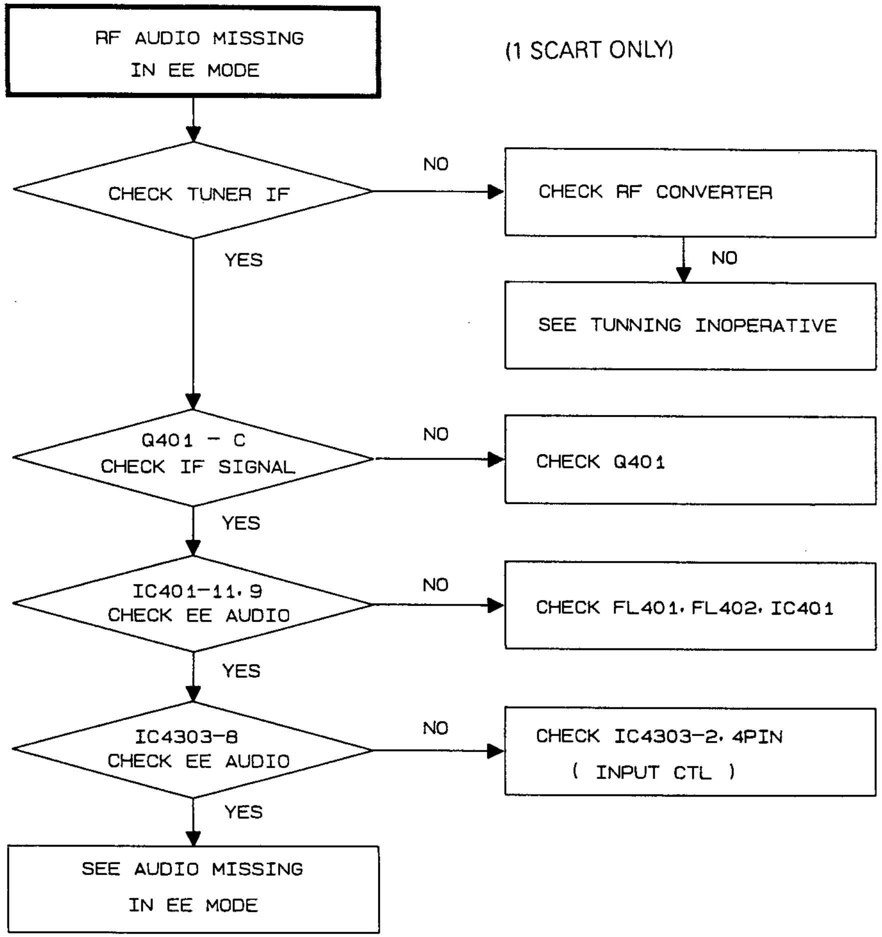

DOES CASSETE LOAD
NO
CHECK LOADING
SECTION
YES
DOES DRUM OPERATE
NO
CHECK DRUM
SECTION
YES
DOES CAPSTAN OPERATE
NO
CHECK CAPSTAN
SECTION
YES
CHECH H' d SW 25Hz
IC 601 17PIN
5V
NO
CHECK IC 201
60 PIN
NO
25Hz
YES
CHANGE IC 201
CHANGE DRUM ASSY
YES
CHECK IC 601
14, 15 PIN
NO
CHECK Q603, Q604
Q607, Q608
YES
CHECK VIDEO SECTION

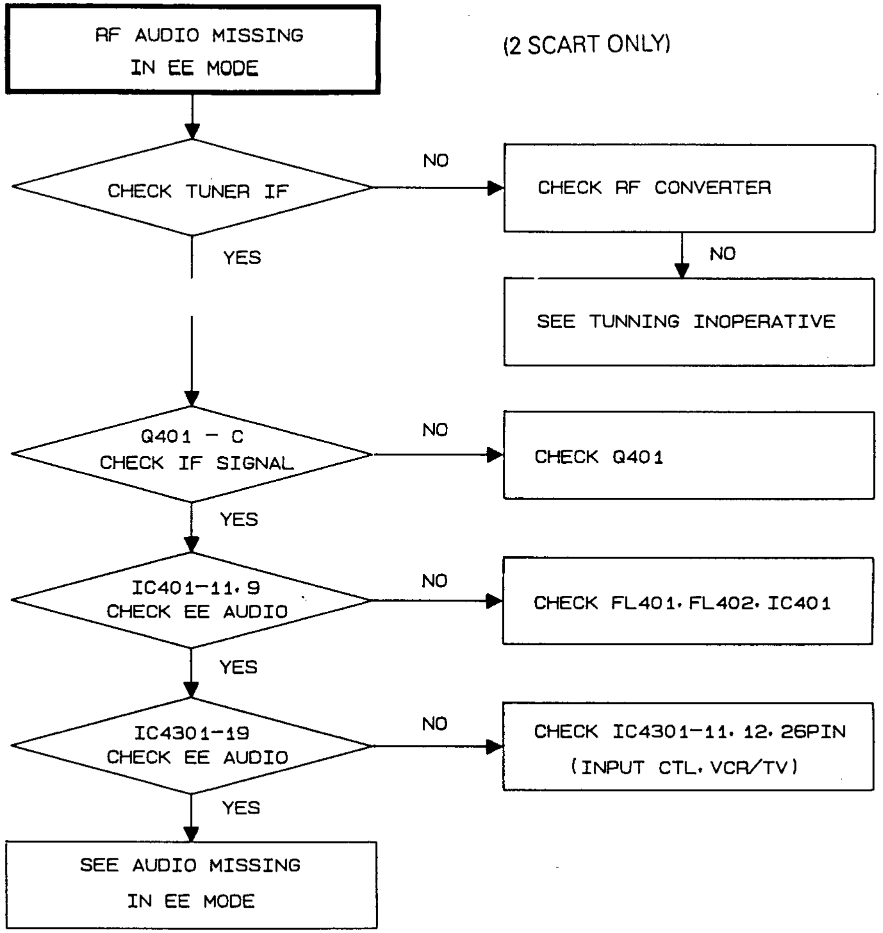
(1 SCART ONLY)

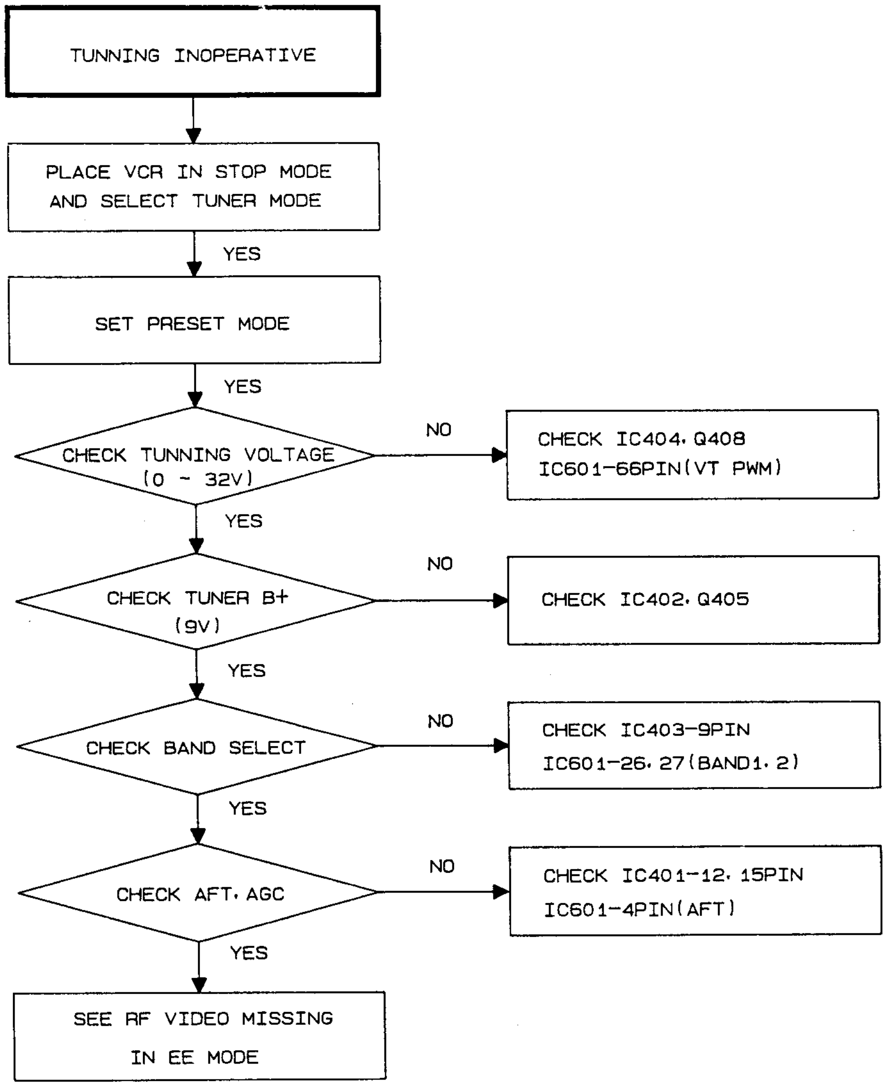

RF VIDEO MISSING IN E-E MODE
CHECK TUNER IF
NO
CHECK RF CONVERTER
NO
SEE TUNNING INOPERATIVE
YES
Q401 - C CHECK IF SIGNAL
NO
CHECK Q401
YES
IC401-14, 7PIN CHECK EE VIDEO
NO
CHECK FL401, FL403, IC401
YES
Q402 - C CHECK EE VIDEO
NO
CHECK Q402
YES
IC4302-8PIN CHECK EE VIDEO
NO
CHECK IC4302-2, 4PIN (INPUT CTL)
YES
SEE VIDEO MISSING IN EE MODE

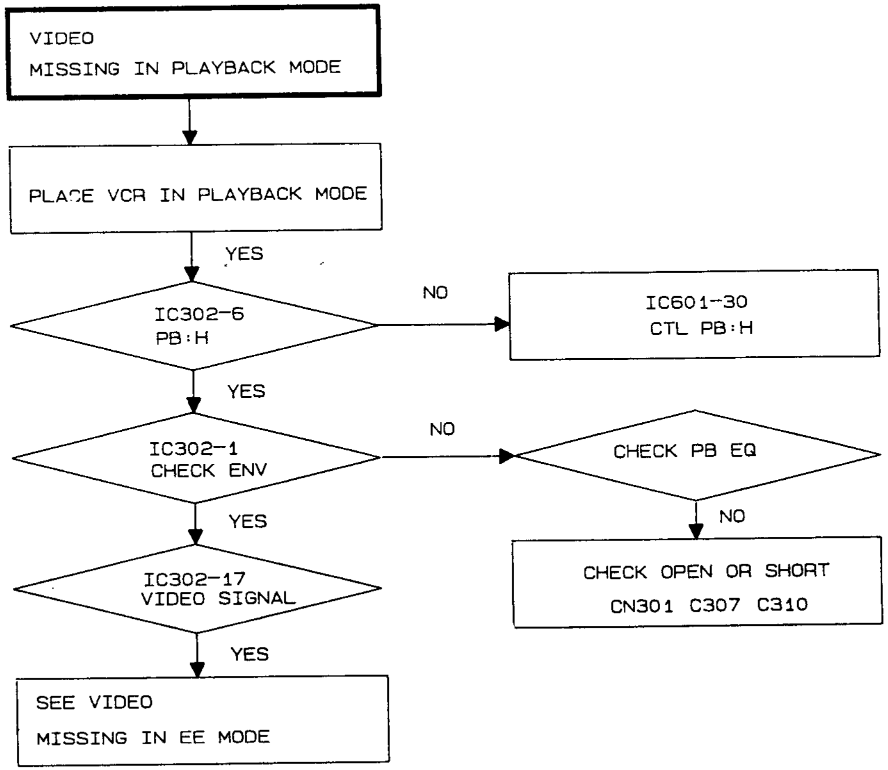
(2 SCART ONLY)

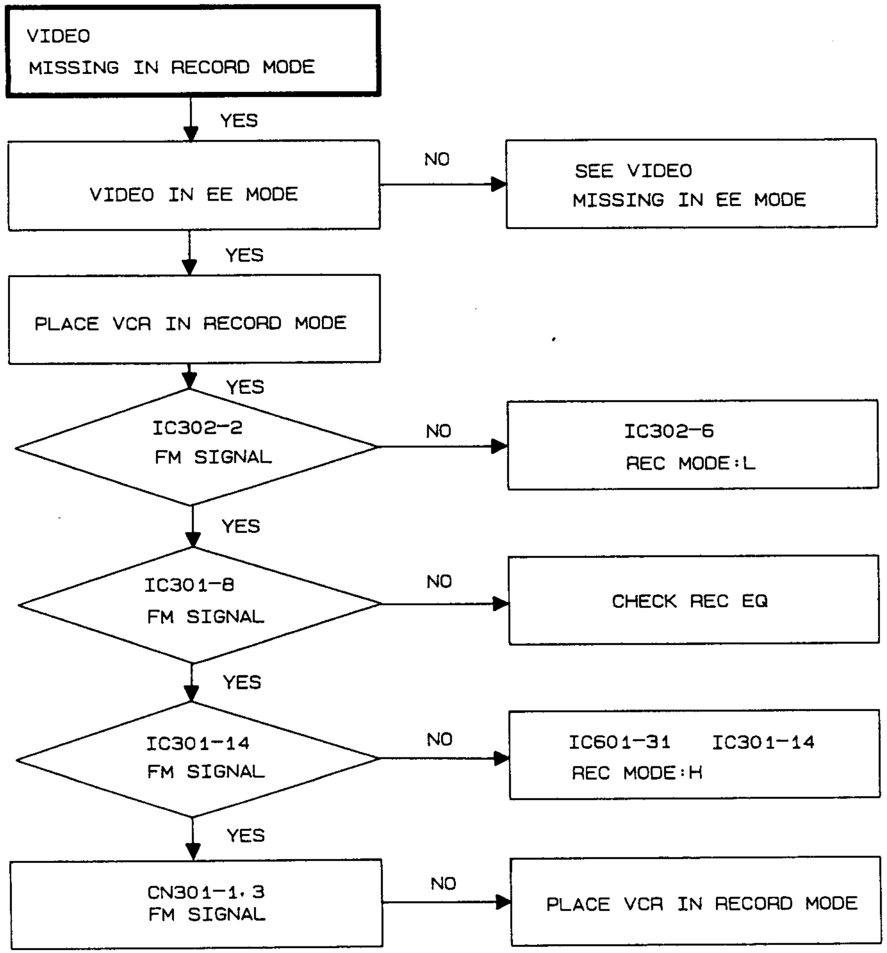

RF VIDEO MISSING IN EE MODE
CHECK TUNER IF
NO
CHECK RF CONVERTER
NO
SEE TUNNING INOPERATIVE
YES
Q401 - C CHECK IF SIGNAL
NO
CHECK Q401
YES
IC401-14, 7PIN CHECK EE VIDEO
NO
CHECK FL401, FL403, IC401
YES
Q402 - C CHECK EE VIDEO
NO
CHECK Q402
YES
IC4301-29PIN CHECK EE VIDEO
NO
CHECK IC4301-11, 12, 26PIN (INPUT CTL, VCR/TV)
YES
SEE VIDEO MISSING IN EE MODE

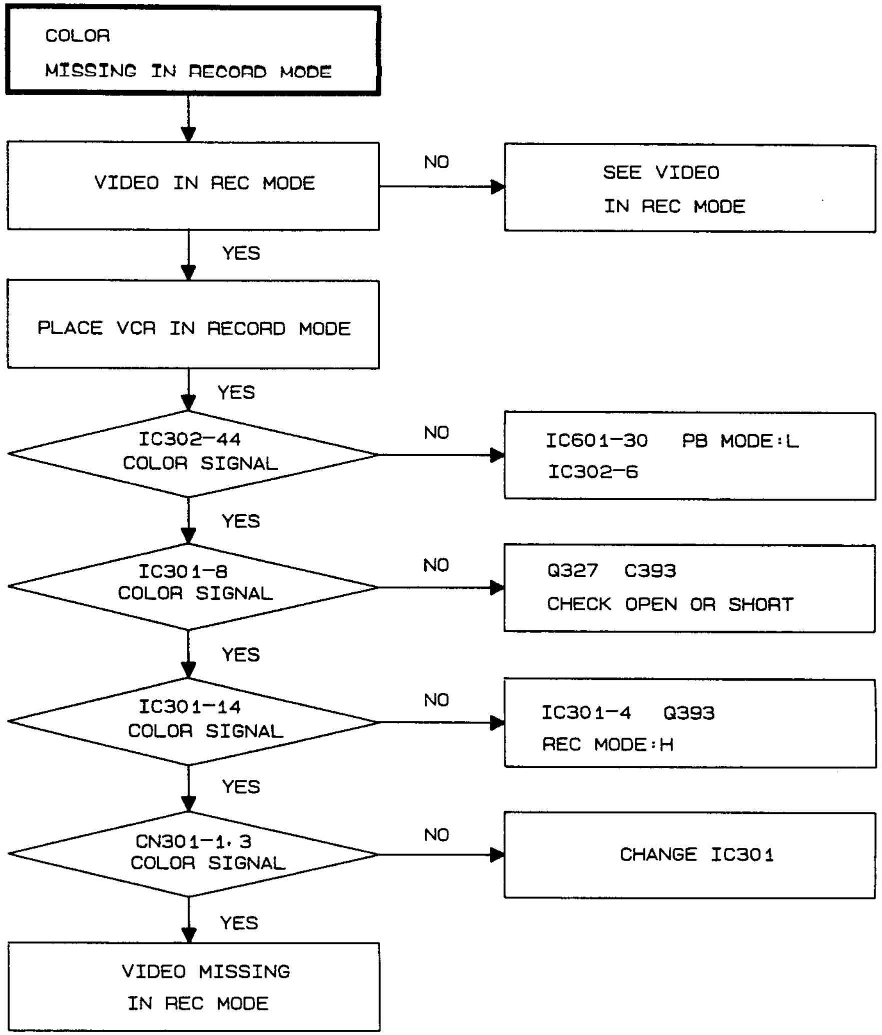

RF AUDIO MISSING
IN EE MODE
(1 SCART ONLY)
CHECK TUNER IF
NO
CHECK RF CONVERTER
NO
SEE TUNNING INOPERATIVE
YES
Q401 – C
CHECK IF SIGNAL
NO
CHECK Q401
YES
IC401–11, 9
CHECK EE AUDIO
NO
CHECK FL401, FL402, IC401
YES
IC4303–8
CHECK EE AUDIO
NO
CHECK IC4303–2, 4PIN
(INPUT CTL)
YES
SEE AUDIO MISSING
IN EE MODE


RF AUDIO MISSING
IN EE MODE
(2 SCART ONLY)
CHECK TUNER IF
NO
CHECK RF CONVERTER
NO
SEE TUNNING INOPERATIVE
YES
Q401 – C
CHECK IF SIGNAL
NO
CHECK Q401
YES
IC401–11, 9
CHECK EE AUDIO
NO
CHECK FL401, FL402, IC401
YES
IC4301–19
CHECK EE AUDIO
NO
CHECK IC4301–11, 12, 26PIN
(INPUT CTL, VCR/TV)
YES
SEE AUDIO MISSING
IN EE MODE

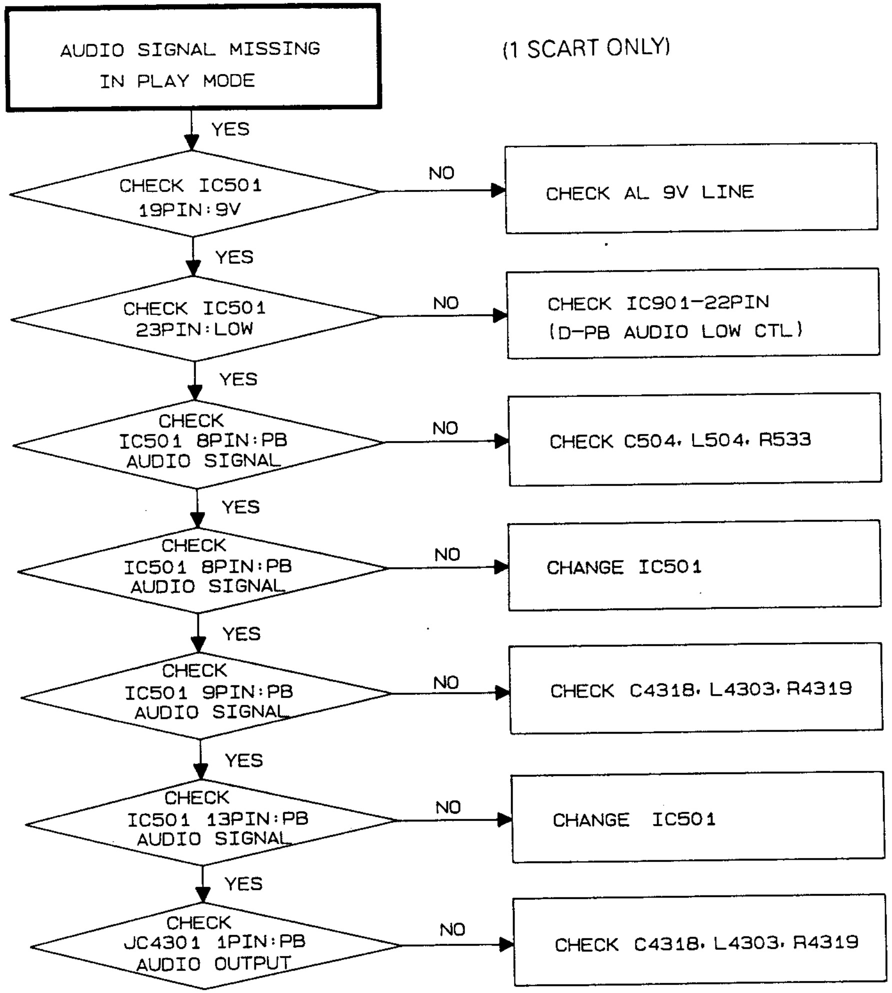

TUNNING INOPERATIVE
PLACE VCR IN STOP MODE AND SELECT TUNER MODE
YES
SET PRESET MODE
YES
CHECK TUNNING VOLTAGE (0 ~ 32V)
NO
CHECK IC404, Q408 IC601-66PIN(VT PWM)
YES
CHECK TUNER B+ (9V)
NO
CHECK IC402, Q405
YES
CHECK BAND SELECT
NO
CHECK IC403-9PIN IC601-26, 27(BAND1, 2)
YES
CHECK AFT, AGC
NO
CHECK IC401-12, 15PIN IC601-4PIN(AFT)
YES
SEE RF VIDEO MISSING IN EE MODE


VIDEO MISSING IN PLAYBACK MODE
PLACE VCR IN PLAYBACK MODE
YES
IC302-6 PB:H
NO
IC601-30 CTL PB:H
YES
IC302-1 CHECK ENV
NO
CHECK PB EQ
NO
CHECK OPEN OR SHORT CN301 C307 C310
YES
IC302-17 VIDEO SIGNAL
YES
SEE VIDEO MISSING IN EE MODE

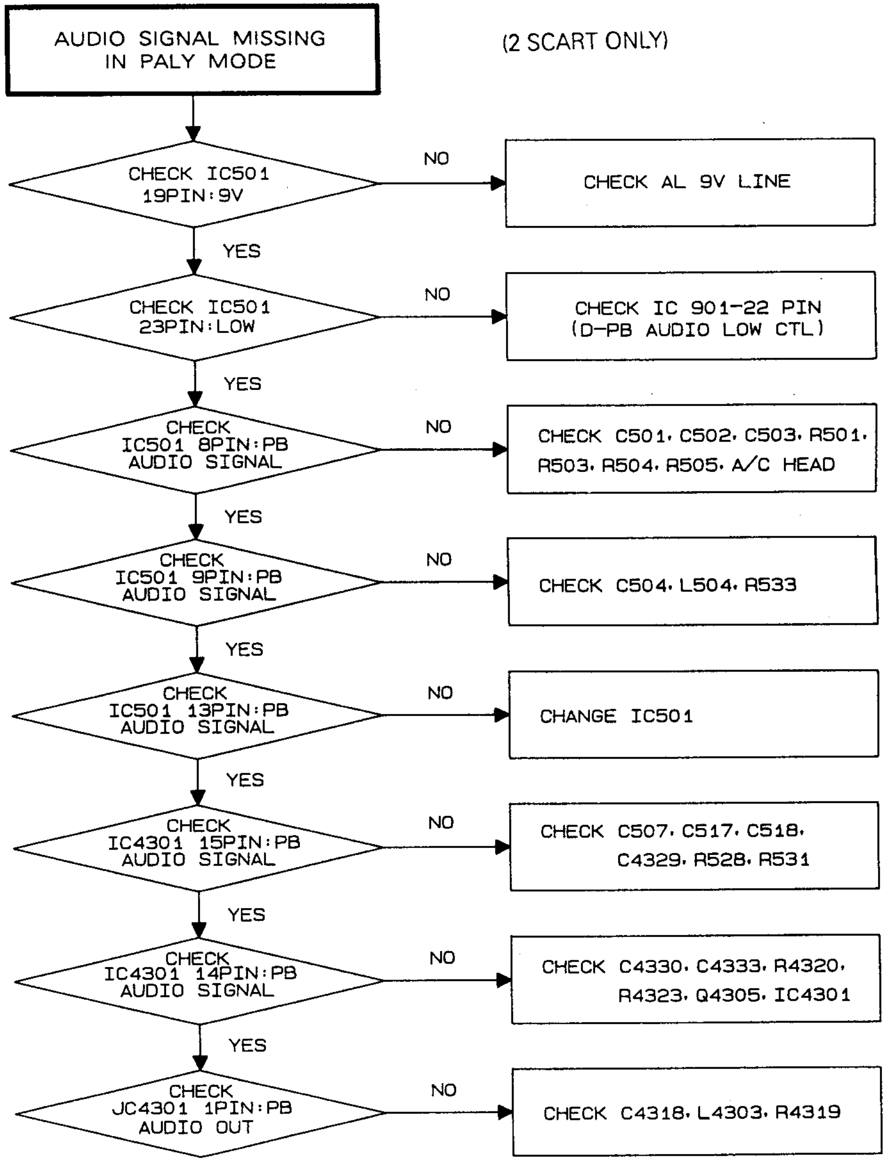

VIDEO
MISSING IN RECORD MODE
YES
VIDEO IN EE MODE
NO
SEE VIDEO
MISSING IN EE MODE
YES
PLACE VCR IN RECORD MODE
YES
IC302-2
FM SIGNAL
NO
IC302-6
REC MODE:L
YES
IC301-8
FM SIGNAL
NO
CHECK REC EQ
YES
IC301-14
FM SIGNAL
NO
IC601-31 IC301-14
REC MODE:H
YES
CN301-1, 3
FM SIGNAL
NO
PLACE VCR IN RECORD MODE

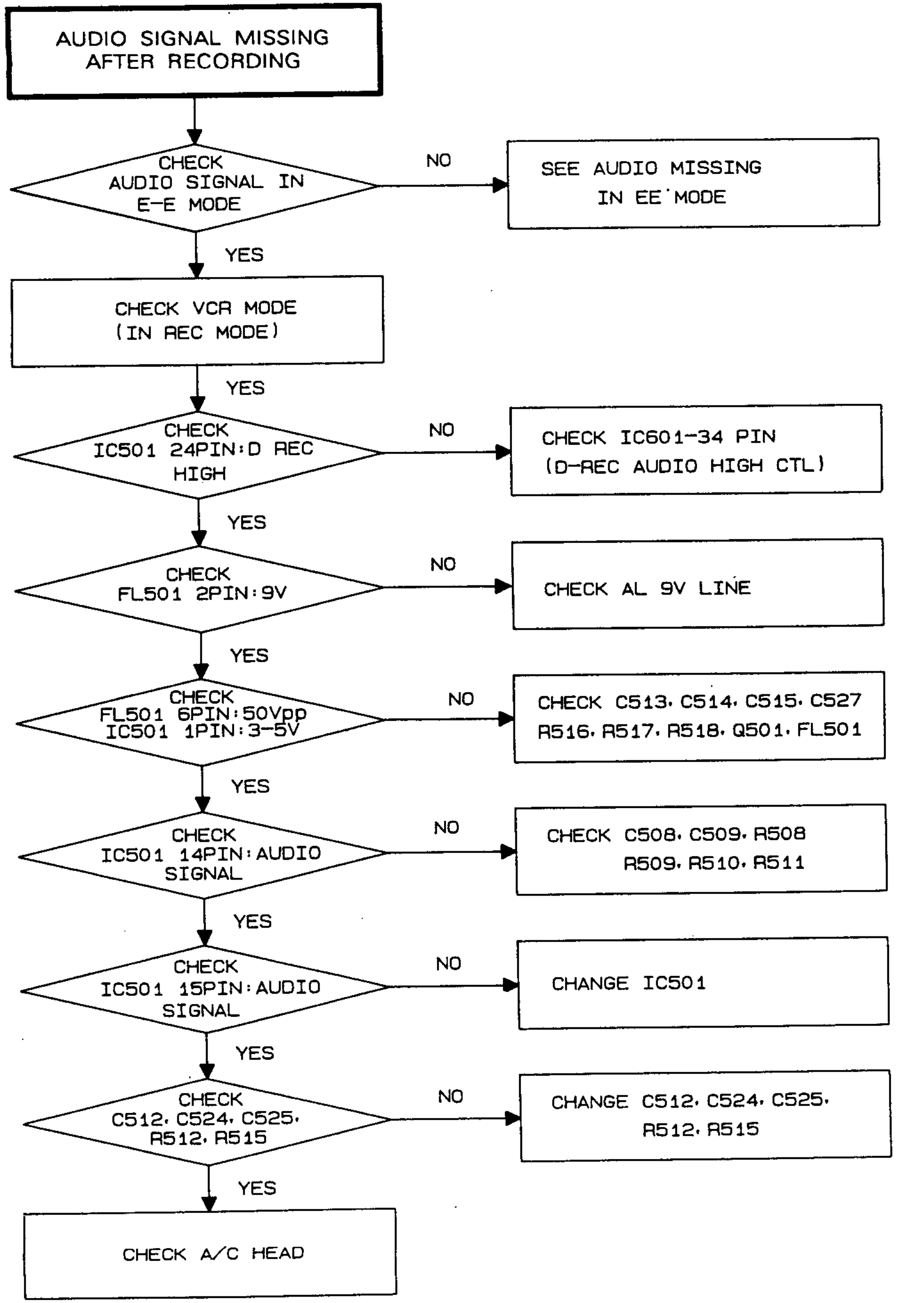

COLOR
MISSING IN RECORD MODE
VIDEO IN REC MODE
NO
SEE VIDEO
IN REC MODE
YES
PLACE VCR IN RECORD MODE
YES
IC302-44
COLOR SIGNAL
NO
IC601-30 PB MODE:L
IC302-6
YES
IC301-8
COLOR SIGNAL
NO
Q327 C393
CHECK OPEN OR SHORT
YES
IC301-14
COLOR SIGNAL
NO
IC301-4 Q393
REC MODE:H
YES
CN301-1, 3
COLOR SIGNAL
NO
CHANGE IC301
YES
VIDEO MISSING
IN REC MODE

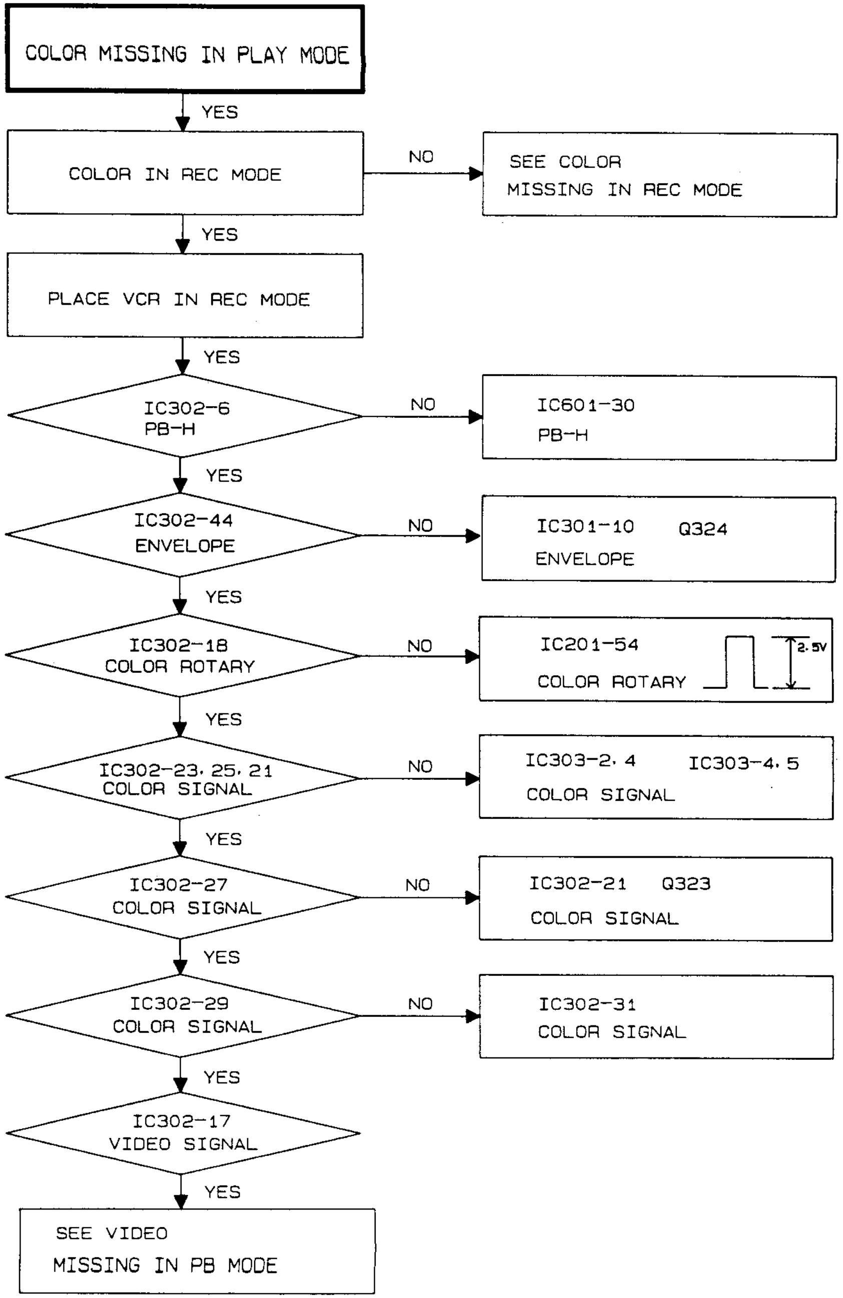
(1 SCART ONLY)


AUDIO SIGNAL MISSING IN PLAY MODE
YES
CHECK IC501 19PIN:9V
NO
CHECK AL 9V LINE
YES
CHECK IC501 23PIN:LOW
NO
CHECK IC901-22PIN (D-PB AUDIO LOW CTL)
YES
CHECK IC501 8PIN:PB AUDIO SIGNAL
NO
CHECK C504, L504, R533
YES
CHECK IC501 8PIN:PB AUDIO SIGNAL
NO
CHANGE IC501
YES
CHECK IC501 9PIN:PB AUDIO SIGNAL
NO
CHECK C4318, L4303, R4319
YES
CHECK IC501 13PIN:PB AUDIO SIGNAL
NO
CHANGE IC501
YES
CHECK JC4301 1PIN:PB AUDIO OUTPUT
NO
CHECK C4318, L4303, R4319

(2 SCART ONLY)


AUDIO SIGNAL MISSING IN PALY MODE
CHECK IC501 19PIN:9V
NO
CHECK AL 9V LINE
YES
CHECK IC501 23PIN:LOW
NO
CHECK IC 901-22 PIN (D-PB AUDIO LOW CTL)
YES
CHECK IC501 8PIN:PB AUDIO SIGNAL
NO
CHECK C501, C502, C503, R501, R503, R504, R505, A/C HEAD
YES
CHECK IC501 9PIN:PB AUDIO SIGNAL
NO
CHECK C504, L504, R533
YES
CHECK IC501 13PIN:PB AUDIO SIGNAL
NO
CHANGE IC501
YES
CHECK IC4301 15PIN:PB AUDIO SIGNAL
NO
CHECK C507, C517, C518, C4329, R528, R531
YES
CHECK IC4301 14PIN:PB AUDIO SIGNAL
NO
CHECK C4330, C4333, R4320, R4323, Q4305, IC4301
YES
CHECK JC4301 1PIN:PB AUDIO OUT
NO
CHECK C4318, L4303, R4319


AUDIO SIGNAL MISSING AFTER RECORDING
CHECK AUDIO SIGNAL IN E-E MODE
NO
SEE AUDIO MISSING IN EE MODE
YES
CHECK VCR MODE (IN REC MODE)
YES
CHECK IC501 24PIN:D REC HIGH
NO
CHECK IC601-34 PIN (D-REC AUDIO HIGH CTL)
YES
CHECK FL501 2PIN:9V
NO
CHECK AL 9V LINE
YES
CHECK FL501 6PIN:50Vpp IC501 1PIN:3-5V
NO
CHECK C513, C514, C515, C527 R516, R517, R518, Q501, FL501
YES
CHECK IC501 14PIN:AUDIO SIGNAL
NO
CHECK C508, C509, R508 R509, R510, R511
YES
CHECK IC501 15PIN:AUDIO SIGNAL
NO
CHANGE IC501
YES
CHECK C512, C524, C525, R512, R515
NO
CHANGE C512, C524, C525, R512, R515
YES
CHECK A/C HEAD


COLOR MISSING IN PLAY MODE
YES
COLOR IN REC MODE
NO
SEE COLOR MISSING IN REC MODE
YES
PLACE VCR IN REC MODE
YES
IC302-6 PB-H
NO
IC601-30 PB-H
YES
IC302-44 ENVELOPE
NO
IC301-10 Q324 ENVELOPE
YES
IC302-18 COLOR ROTARY
NO
IC201-54 COLOR ROTARY
2.5V
YES
IC302-23, 25, 21 COLOR SIGNAL
NO
IC303-2, 4 IC303-4, 5 COLOR SIGNAL
YES
IC302-27 COLOR SIGNAL
NO
IC302-21 Q323 COLOR SIGNAL
YES
IC302-29 COLOR SIGNAL
NO
IC302-31 COLOR SIGNAL
YES
IC302-17 VIDEO SIGNAL
YES
SEE VIDEO MISSING IN PB MODE

6. CHIP REPLACEMENT

6-1. PRECAUTION FOR THE CHIP REPLACEMENT

1. Do not touch the part directly with the soldering iron. ICs, especially TSOP, are easily damaged by heat.
2. Use care regarding the soldering iron tip. Avoid rapidly heating parts: some parts can be damaged by sudden heating. Preheat the part to about 100℃ for several minutes before installing it.
3. Use soldering tip temperature of about 240℃ on larger parts, use a slightly higher temperature (about 280℃).
4. The thin (0.3mm) solder for miniature parts. Supplementary flux is thus needed in most cases.

☞ **A/V systems are manufactured using flux which is cleaned by water in the factory. When you replace the part or troubleshooting, use proper flux and solder which can be cleaned by water. Soldering area will corrode if proper flux and solder are not used during replacement. This may cause a fatal error to the system.**

5. Use care not to damage the foil pattern, especially when removing.
6. Because of the many pins, cleanliness of the foil pattern is extremely important after removing the IC.
7. Use care to avoid solder bridges. Remove any that occur.
8. Position the part carefully. This will affect the soldering operation. Be very precise in positioning the IC. Soldering opposite pins first holds the IC in place and makes soldering the other pins easier.
9. Do not reuse removed parts.
10. Check for solder joints, especially miniature parts with small leads.
11. A defective trimming resistor cannot be adjusted externally. Replace with an ordinary variable resistor.
12. It is important to inspect the work with a magnifier. Check after installing (cold solder joints, etc).

6-2. TOOLS FOR THE CHIP REPLACEMENT

The tools for chip replacement include the following:

1. Thin tip type soldering iron
2. Small flat-blade tip type soldering iron
3. Special desoldering tip iron
4. Airblower unit
5. Flat Package Pick-up
6. Flux can be cleaned by water
7. 0.3mm thin solder can be cleaned by water
8. Desoldering wire
9. Tweezers

6-3. CHIP RESISTORS AND CHIP CAPACITORS

6-3-1. Type of Parts

The type of chip resistors and chip capacitors are as follows.

1. Thick Film Chip Resistors
2. Carbon Film Chip Resistors
3. Metal Film Chip Resistors
4. Chip Ceramic Capacitors
5. Chip Trimming Resistors

6-3-2. Removing the Part

Using two soldering irons ;

1. Use thin tip soldering irons.
2. Use soldering tip temperature of about 280℃.
3. Simultaneously heat both ends of the part.
4. While heating, grasp the part with the tips of the soldering iron to remove.
5. Use desoldering wire to completely remove the old solder.
6. A clean foil pattern for the new part is very important.

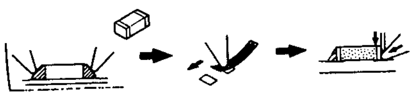


Fig. 1

6-3-3. Installing the Part

1. Clean the area where the new part is to be mounted.
2. Apply flux.
3. Set part correctly into position and prevent it from shifting.
4. Bring the soldering iron tip close to the part contact without actually touching it. Melt thin (0.3mm) solder between the tip and part so that it flows into the part contact.
5. Check work with a magnifier.

6-4. CHIP TANTALUM CAPACITORS AND CHIP FILTERS

6-4-1. Type of Parts

The type of chip tantalum capacitors and chip filters are as follows.

1. Chip Inductors
2. Chip Tantalum Capacitors
3. Chip Tantalum Electrolytic Capacitors
4. Chip Aluminum Electrolytic Capacitors
5. Chip Transformers
6. Chip Filters

6-4-2. Removing the Part

1. Using special desoldering iron ;

1) Select soldering tip according to part size.
2) When the solder melts, remove the part
3) Bring the tip into contact with the soldered points.
4) Remove the old solder with desoldering wire.

2. Using two soldering irons ;

1) Use small flat-blade tips.
2) Heat both ends of the part simultaneously.
3) When the solder melts, grasp and remove the part with the soldering iron tips.
4) Remove the old solder with desoldering wire.

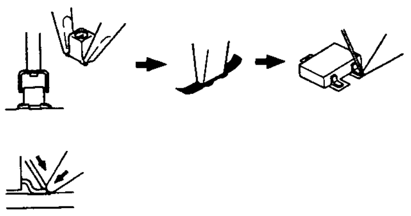


Fig. 2

6-4-3. Installing the Part

1. Clean the area where the new part is to be mounted.
2. Apply flux.
3. Set part correctly into position and prevent it from shifting.
4. Use sharp soldering iron tip. Bring it close to the part contact without actually touching. Melt thin solder between the tip and part so that it flows into the part contact.
5. Check work with a magnifier.

6-5. CHIP VRs, CHIP TRIMMER CAPACITORS, DIODES AND TR.

6-5-1. Type of Parts

The type of the part is as follows.

1) Chip VRs
2) Chip Trimmer Capacitors
3) Diode
4) Transistors

6-5-2. Removing the Part

Using two soldering irons ;

1. Use small flat-blade tips.
2. Heat the leads of the part simultaneously.
3. When the solder melts, grasp and remove the part with the soldering iron tips.
4. Remove the old solder with desoldering wire.

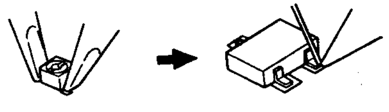


Fig. 3

6-5-3. Installing the Part

1. Clean the area where the new part is to be mounted.
2. Apply flux.
3. Set part correctly into position and prevent it from shifting.
4. Use sharp soldering iron tip. Bring it close to the part contact without actually touching. Melt thin solder between the tip and part so that it flows into the part contact.

6-6. CHIP ICs

6-6-1. Type of Chip ICs

The type of the Chip ICs are as follows ;

1. SOP(Small Outline Package) IC
2. SSOP(Shrink Small Outline Package) IC
3. VSOP(Very Small Outline Package) IC
4. QFP(Quad Flat Package) IC
5. VQFP(Very Quad Flat Package) IC
6. PLCC(Plastic Leaded Chip Carrier) IC
7. TSOP(Thin Small Outline Package) IC

6-6-2. Removing the Part

1. Using special desoldering iron ;

1) Select the tip according to the size and shape of the IC.
2) "Tin"the tip with a small amount of the IC leads.
3) Set the tip squarely over the IC leads.
4) When the solder melts, carefully twist the iron.
5) Raise and remove the IC.

2. Using shaped airblower unit ;

1) Select the correct nozzle.
2) Select the temperature and airblow.
   (suggested : temperature : 7, airblow : 4)
3) Engage the IC removing tool
4) Use the airblow to preheat the IC for about 5 seconds, then heat with the nozzle until the IC remover lifts the part from the board.

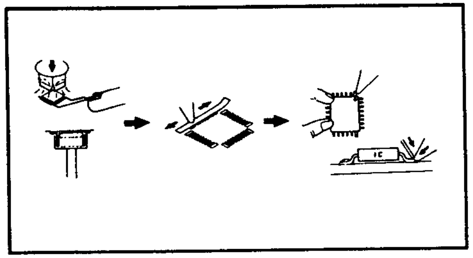


Fig. 4

6-6-3. Installing the Part

1. Use desoldering wire to remove the previous solder.
2. Clean the location.
3. Apply flux.
4. Position the IC and solder two pins at opposite sides.
5. Use a sharp tipped soldering iron and carefully solder each pin. (After gaining experience, a thicker tip can be used for better work efficiency).
6. Remove any solder bridges with desoldering wire.
7. Inspect the work with a magnifier.

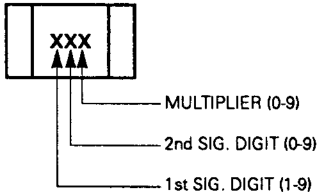
6-7. HOW TO READ LEADLESS (CHIP) COMPONENT VALUES

6-7-1. Check the followings before SMD Troubleshooting

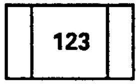
- Cracked or Chipped Component Body
- Cracked or Separated Solder Joints
- Peeling end Terminations or Fractured Leads
- Rejection of Solder from Copper Pads or Component
- Foreign Matter on Copper Pads
- Solder Bridges

6-7-2. SMD (Surface Mounted Device) Identification

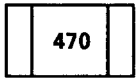
1) Standard Chip Resistor Code



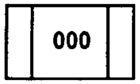
Examples



= 12 x 103 (1000) = 12000 Ω
= 12K Ω



= 47 x 100 (1) = 47 Ω

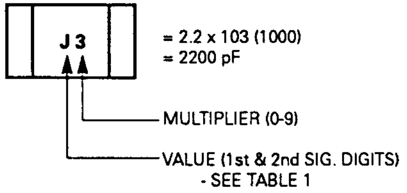


= CHIP JUMPER = 0 Ω

1. Chip Resistor Identification

2. Chip Capacitor Identification

1) Standard Two Place Code



= 2.2 x 103 (1000)
= 2200 pF

Examples

S2 = 4.7 x 100 = 470 pF

b0 = 3.5 x 1.0 = 3.5 pF

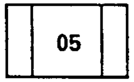
Note : Ceramic chip capacitors have no marking.

VALUE (33 VALUE SYMBOLS) - UPPER AND LOWER CASE LETTERS					MULTIPLIER
A — 1.0	H — 2.0	b — 3.5	f — 5.0	X — 7.5	0 = × 1.0
B — 1.1	J — 2.2	p — 3.6	T — 5.1	t — 8.0	1 = × 10
C — 1.2	K — 2.4	Q — 3.9	U — 5.6	Y — 8.2	2 = × 100
D — 1.3	a — 2.5	d — 4.0	m — 6.0	y — 9.0	3 = × 1000
E — 1.5	L — 2.7	R — 4.3	V — 6.2	Z — 9.1	4 = × 10000
F — 1.6	M — 3.0	e — 4.5	W — 6.8		5 = × 100000 etc.
G — 1.8	N — 3.3	S — 4.7	n — 7.0		

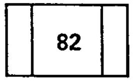
- - - TABLE 1 - - -

2) Alternate Two Place Code

- Values below 100 pF - Value Read Directly

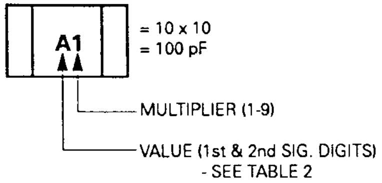


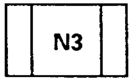
= 5 pF



= 82 pF

- Values 100 pF and above - Letter / Number Code



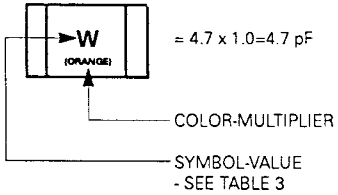


= 33 x 1000
= 33000 pF
= 0.33 uF

VALUE (24 VALUE SYMBOLS) - UPPER CASE LETTERS ONLY					MULTIPLIER
A — 10	F — 16	L — 27	R — 43	W — 68	1 = × 10
B — 11	G — 18	M — 30	S — 47	X — 75	2 = × 100
C — 12	H — 20	N — 33	T — 51	Y — 82	3 = × 1000
D — 13	J — 22	P — 36	U — 56	Z — 91	4 = × 10000
E — 15	K — 24	Q — 39	V — 62		5 = × 100000 etc.

--- TABLE 2 ---

3) Standard Single Place Code



= 4.7 x 1.0=4.7 pF

Examples

R (Green) = 3.3 x 100 = 330 pF

7 (Blue) = 8.2 x 1000 = 8200 pF

VALUE (24 VALUE SYMBOLS) - UPPER CASE LETTERS & NUMERALS					MULTIPLIER
A — 1.0	H — 1.6	N — 2.7	V — 4.3	3 — 6.8	ORANGE = × 1.0
B — 1.1	I — 1.8	O — 3.0	W — 4.7	4 — 7.5	BLACK = × 10
C — 1.2	J — 2.0	R — 3.3	X — 5.1	7 — 8.2	GREEN = × 100
D — 1.3	K — 2.2	S — 3.6	Y — 5.6	9 — 9.1	BLUE = × 1000
E — 1.5	L — 2.4	T — 3.9	Z — 6.2		VIOLET = × 10000
					RED = × 100000

--- TABLE 3 ---

7. ELECTRICAL REPLACEMENT PARTS LIST

Loca.No	Part No	Description & Specification	Remark
601		ASSY MAIN	
	69557-302-212	SV-30XK/SEG,SV-31XK/SEG	
	69557-302-213	SV-30XK/SEC,NSI,SEP,AMF,SEI,EDI,SV-31XK/SEC	
	69557-302-216	SV-40XK/SEG	
	69557-302-217	SV-40XK/SEC,NSI,SEP,SEI	
	69557-302-218	SV-40XK/AMF,EDI	
SMPS PARTS			
C01	B1102-0266	C-FILM;COS 92 2 275V T 104-N -25/85 ARCOTRONICS	
C02	61419-001-001	C-FILM;KNB1530 0.1UF/AC250V	
C03	A1100-0536	C-CERAMIC;CKS 45 B 400V 101-K SC B 2G 101-K 12BS	
C04	A1100-0536	C-CERAMIC;CKS 45 B 400V 101-K SC B 2G 101-K 12BS	
C05	A1100-0450	C-CERAMIC;CK 45 B 400V 222-K CK45B500V222K	
C06	A1100-0580	C-CERAMIC;CK 45 B 400V T 332-M SCF2G332M16BS	
C10	A1104-0511	C-ELEC;CE 04 B 400V T 470-M SMH400VB47M 18X25	
C11	A1102-0219	C-FILM;CQ 922 P 630V T 103-K SC-ARD135	
C12	61419-001-006	C-CERAMIC;CKB3A 101K 06BS 1KV	
C13	B1102-0260	C-FILM;CQ 922 M 50V T 102-J ECQB1H102JF3	
C14	B1102-0125	C-FILM;CQ 982 P 50V T 104-J 40/85 ECQV1H104JZ3	
C15	61637-208-229	C-ELEC;CEAP 50V 2.2M SA (5X11)	
C16	B1102-0259	C-FILM;CQ 922 M 50V T 562-J ECQB1H562JF3	
C17	61637-208-220	C-ELEC;CEAP 50V 22M SA(6X11)	
C18	61507-121-511	C-POLYESTER;CQ921M TAPG 50V 223-J	
C30	61637-511-100	C-ELEC;CEAP 100V 10M SG(6.3X11)	
C31	A1104-0378	C-ELEC;CE 04 F 35V T 331-M STX/KME -40/105	
C32	A1104-0373	C-ELEC;CE 04 F 25V T 331-M STX/KME -40/105	
C33	A1104-0373	C-ELEC;CE 04 F 25V T 331-M STX/KME -40/105	
C34	61637-504-102	C-ELEC;CEAP 16V 1000M SG(10X20)	
C35	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)	
C36	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)	
C37	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)	
C38	B1102-0125	C-FILM;CQ 982 P 50V T 104-J 40/85 ECQV1H104JZ3	
C39	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C40	A1104-0480	C-ELEC;CE 04 F 16V T 471-M STX/KME -40/105	
CN01	A6010-0971	CONNECTOR-WAFER;GP390-3P-TM WHT G/S	
D01	B4104-0092	DIODE-RECT;D1N60 600V 1A T	⚠
D02	B4104-0092	DIODE-RECT;D1N60 600V 1A T	⚠
D03	B4104-0092	DIODE-RECT;D1N60 600V 1A T	⚠
D04	B4104-0092	DIODE-RECT;D1N60 600V 1A T	⚠
D10	B4102-0006	DIODE-FR;EG01C 3.3V 500MA 0.1US	
D11	62169-406-482	DIODE;1N4148 SAMSUNG	
D12	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T	
D30	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T	
D31	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T	
D32	B4102-0050	DIODE-FR;D3L20U 200V 2.5A 35NS STICK	
D33	B4102-0050	DIODE-FR;D3L20U 200V 2.5A 35NS STICK	
D34	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T	
D35	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T	
F01	B3065-0157	FUSE;FST 250V 1.6A 20MM SEMKO S505 C	
IC01	A4008-1122	IC;KA7552 DIP	⚠
IC02	B4161-0032	PHOTO-COUPLER;PC121F ST DIP	⚠
IC03	A4008-0757	IC;KA431Z TO-92 TAPING	
L01	A1151-0023	COIL-LINE FILTER;SHL030 25MH 1.5 STICK	
L02	A1130-0077	COIL-CHOKE;10UH-J RA Q80 F150KHZ	
L30	A1160-0016	INDUCTOR;70UH-M RT BFS3565R2F	
L31	A1130-0077	COIL-CHOKE;10UH-J RA Q80 F150KHZ	
L32	A1130-0077	COIL-CHOKE;10UH-J RA Q80 F150KHZ	
L33	A1160-0016	INDUCTOR;70UH-M RT BFS3565R2F	
L40	A1160-0016	INDUCTOR;70UH-M RT BFS3565R2F	
PT01	A1206-0072	TRANS-SWITCHING;P:85-276V S:5/38V DEMKO ST	⚠
Q03	62147-401-835	TRANSISTOR;KSA 928A-Y TAPG	
Q04	62137-701-010	TRANSISTOR;KSR 1001 TAPG	
Q05	62137-302-441	TRANSISTOR;KSC 2328-Y TAPG	

Loca.No	Part No	Description & Specification	Remark
Q1	B4054-0052	FET;2SK903M-F155 40W 3A 800V MOS/N-CHANNEL ST	⚠
R10	A1014-0053	R-CEMENT;RWC 2 R 2R7-K STICK	
R11	A1006-0793	R-METAL FILM;RM 1/4 P 623-J SFR25	
R12	A1006-0793	R-METAL FILM;RM 1/4 P 623-J SFR25	
R13	A1006-0809	R-METAL FILM;RM 1/4 T 333-J SFR25	
R14	A1006-0793	R-METAL FILM;RM 1/4 P 623-J SFR25	
R15	61048-177-151	R-CARBON;RD 1/8 T 151-J	
R16	61048-177-390	R-CARBON;RD 1/8 T 390-J	
R17	B1004-0198	R-METAL OXIDE;RS 2 T 333-J ERG2SJ33E	
R18	B1004-0198	R-METAL OXIDE;RS 2 T 333-J ERG2SJ33E	
R19	61048-177-104	R-CARBON;RD 1/8 T 104-J	
R20	61048-177-270	R-CARBON;RD 1/8 T 270-J	
R21	61048-177-151	R-CARBON;RD 1/8 T 151-J	
R22	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R23	A1014-0055	R-CEMENT;RWC 2 R(S) R47-K STICK	
R24	A1000-0560	R-METAL FILM;RM 1/8 T 512-F	
R30	61048-177-391	R-CARBON;RD 1/8 T 391-J	
R31	61048-177-122	R-CARBON;RD 1/8 T 122-J	
R32	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R33	A1006-0592	R-METAL FILM;RM 1/8 T 302-F	
R34	A1006-0423	R-METAL FILM;RM 1/8 T 222-F	
R36	61048-177-104	R-CARBON;RD 1/8 T 104-J	
R37	A1006-0812	R-METAL FILM;RM 1/4 T 392-J SFR25	
VA1	A1330-0058	VARISTOR;SVC471D-14A 470V 0.6W 2500A	
VA2	A1330-0058	VARISTOR;SVC471D-14A 470V 0.6W 2500A	
ZD11	62169-403-829	DIODE-ZENER;MTZ 30D	
ZD12	62169-423-030	DIODE-ZENER;MTZ-18C	
ZD13	A4106-0006	DIODE-ZENER;MTZ4.7B 4.7V 1MA T	
POWER PARTS			
C101	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
D103	B4104-0046	DIODE-RECT;1N4002GP 200V 1A	
D104	B4104-0046	DIODE-RECT;1N4002GP 200V 1A	
D105	B4104-0046	DIODE-RECT;1N4002GP 200V 1A	
D153	B4104-0046	DIODE-RECT;1N4002GP 200V 1A	
R101	A1006-0796	R-METAL FILM;RM 1/4 T 102-J SFR25	
R105	A1020-0322	R-CHIP;RH 1/8 BS 222-J 20X12 RD3A2BY22[illegible]	
R109	A1020-0321	R-CHIP;RH 1/8 BS 333-J 20X12 RD3A2BY333J	
ZD102	62169-403-829	DIODE-ZENER;MTZ 30D	
SYSTEM CONTROL PARTS			
C601	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C602	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C603	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C604	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C606	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C607	B1104-0294	C-ELEC;CE 03 E 5.5V T 104-Z SUPER/EECS5R5T104	
C608	61637-502-471	C-ELEC;CEAP 6.3V 470M SG(8X11.5)	
C609	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C610	A1100-0443	C-CERAMIC,CHIP;CC OB SL 50V 150-J 20X12 UCN053SL15	
C611	A1100-0443	C-CERAMIC,CHIP;CC OB SL 50V 150-J 20X12 UCN053SL15	
C612	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C613	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C614	B1102-0125	C-FILM;CQ 982 P 50V T 104-J 40/85 ECQV1H104JZ3	
C615	61407-117-228	C-CERAMIC.AXIAL;CK OA F 25V 223Z/F 25V 223ZT	
C616	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C617	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C618	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C619	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C620	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
CN601	B6010-0915	CONNECTOR-WAFER;TMC-A02X-A1 WHT STICK	
CN602	A6010-1366	CONNECTOR-WAFER;35223-2010 WHT MOLEX SIDE ENTRY	
CN603	A6010-1366	CONNECTOR-WAFER;35223-2010 WHT MOLEX SIDE ENTRY	
D601	62169-406-482	DIODE;1N4148 SAMSUNG	
D602	B4104-0046	DIODE-RECT;1N4002GP 200V 1A	
D603	B4104-0046	DIODE-RECT;1N4002GP 200V 1A	

Loca.No	Part No	Description & Specification	Remark
IC601	67199-0218-00	MICOM;HD6433726-A79F SV-80X QFP	
IC602	62119-401-300	IC;KA8301(N.M)	
IC603	A4008-0754	IC;KA7533 DIP	
IC604	B4012-0110	IC-LINEAR;XL24C02 DIP	
L601	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
LD601	B4150-0133	LED-INFRARED;GL381 YEL 950NM/3.5V	
PT601	B4161-0036	PHOTO-INTERRUPTER;SG-105LF3 ST	
PT602	B4161-0036	PHOTO-INTERRUPTER;SG-105LF3 ST	
Q601	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q602	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q607	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q608	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
R601	A1020-0795	R-CHIP;RH 1/8 BS 363-J 20X12	
R603	61048-177-333	R-CARBON;RD 1/8 T 333-J	
R604	61048-177-224	R-CARBON;RD 1/8 T 224-J	
R605	61048-177-391	R-CARBON;RD 1/8 T 391-J	
R606	61048-177-224	R-CARBON;RD 1/8 T 224-J	
R607	A1020-0334	R-CHIP;RH 1/8 BS 391-J 20X12 RD3A2BY391J	
R608	A1020-0811	R-CHIP;RH 1/8 BS 683-J 20X12	
R609	A1020-0338	R-CHIP;RH 1/8 BS 511-J 20X12 RD3A2BY511J	
R610	61048-177-270	R-CARBON;RD 1/8 T 270-J	
R611	A1020-0335	R-CHIP;RH 1/8 BS 472-J 20X12 RD3A2BY472J	
R612	A1020-0825	R-CHIP;RH 1/8 BS 473-J 20X12	
R613	B1004-0357	R-METAL OXIDE;RS 2 RT 3R9-J	
R615	61048-177-513	R-CARBON;RD 1/8 T 513-J	
R616	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R617	61048-177-472	R-CARBON;RD 1/8 T 472-J	
R618	A1020-0335	R-CHIP;RH 1/8 BS 472-J 20X12 RD3A2BY472J	
R619	A1020-0825	R-CHIP;RH 1/8 BS 473-J 20X12	
R620	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R621	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R622	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R623	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R625	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R626	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R627	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R628	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R629	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R632	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R633	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R634	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R635	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R637	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R638	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R641	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	
R644	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R648	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R649	A1020-0442	R-CHIP;RH 1/8 BS 224-J 20X12 RD3A2BY224J	
R650	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R651	61048-177-224	R-CARBON;RD 1/8 T 224-J	
R660	A1020-0778	R-CHIP;RH 1/8 BS 154-J 20X12	
R661	A1020-0778	R-CHIP;RH 1/8 BS 154-J 20X12	
R662	A1020-0329	R-CHIP;RH 1/8 BS 153-J 20X12 RD3A2BY153J	
R663	A1020-0329	R-CHIP;RH 1/8 BS 153-J 20X12 RD3A2BY153J	
R664	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R665	A1020-0774	R-CHIP;RH 1/8 BS 123-J 20X12	
R666	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R667	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R670	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R690	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R691	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R692	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R693	61048-177-101	R-CARBON;RD 1/8 T 101-J	
S601	B4064-0007	TR-PHOTO;PT495F 35V 20MA 50MW 860NM/1V 20DEG	

Loca.No	Part No	Description & Specification	Remark
S602	B4064-0007	TR-PHOTO;PT495F 35V 20MA 50MW 860NM/1V 20DEG	
SW601	66203-0020-00	SWITCH-PROGRAM;MXS00280MLB0	
W237	61048-177-621	R-CARBON;RD 1/8 T 621-J	
W273	62427-020-010	COIL PEAKING.AXIAL;LAL02TB 1R0J TAPG	
W290	61048-177-102	R-CARBON;RD 1/8 T 102-J	
XT601	B1283-0036	RESONATOR-CERAMIC;8MHZ EFOEC8004T4 3/CN J TAPG	
XT602	64539-021-009	CRYSTAL;32.768KHZ	
SERVO PARTS			
C201	A1100-0135	C-CERAMIC,CHIP;CK 73 X7R 50V T 473-K C2012 21B473K	
C202	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C203	61453-130-226	C-CERAMIC.CHIP;1206 5E 224ZAT MA	
C204	61617-405-470	C-ELECTROLYTIC;CE04W TAPG 25V 47M(RSS 6.3X7)	
C206	A1104-0609	C-ELEC;CE 04 -40/85 35V T 4R7-M SRE 4X5	
C207	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C208	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C209	A1100-0439	C-CERAMIC,CHIP;CK OB A 50V 181-K 20X12 UCN053A181K	
C210	61407-117-228	C-CERAMIC.AXIAL;CK OA F 25V 223Z/F 25V 223ZT	
C211	A1104-0674	C-ELEC;CE 04 -40/85 16V T 330-M SRE 6.3X5 PI5 33UF	
C212	A1100-0444	C-CERAMIC,CHIP;CK OB Y 25V 102-M 20X12 TCN053Y102M	
C213	A1100-0444	C-CERAMIC,CHIP;CK OB Y 25V 102-M 20X12 TCN053Y102M	
C214	61453-130-226	C-CERAMIC.CHIP;1206 5E 224ZAT MA	
C220	A1104-0609	C-ELEC;CE 04 -40/85 35V T 4R7-M SRE 4X5	
C223	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C224	61453-130-161	C-CERAMIC CHIP;0805 5E 683MAT MA	
C225	A1104-0610	C-ELEC;CE 04 -40/85 50V T 010-M NP SRE-BP 3.5X5	
C226	61453-130-226	C-CERAMIC.CHIP;1206 5E 224ZAT MA	
C227	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C228	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C233	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C235	61453-130-226	C-CERAMIC.CHIP;1206 5E 224ZAT MA	
C238	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C239	61453-130-153	C-CERAMIC.CHIP;0805 5C 153KAT MA	
C240	61453-130-226	C-CERAMIC.CHIP;1206 5E 224ZAT MA	
C241	A1100-0855	C-CERAMIC,CHIP;CK OB Y5P 50V 221-K 20X12 UCN053B22	
C242	A1100-0855	C-CERAMIC,CHIP;CK OB Y5P 50V 221-K 20X12 UCN053B22	
C250	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C255	61617-405-470	C-ELECTROLYTIC;CE04W TAPG 25V 47M(RSS 6.3X7)	
C256	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C260	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C270	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
CN201	B6010-0855	CONNECTOR-HOUSING;TKC-G09P-A1 BLK	
CN202	B6010-0857	CONNECTOR-HOUSING;TKC-G06P-A1 BLK	
D202	62169-406-482	DIODE;1N4148 SAMSUNG	
D203	62169-406-482	DIODE;1N4148 SAMSUNG	
D204	62169-406-482	DIODE;1N4148 SAMSUNG	
D205	62169-406-482	DIODE;1N4148 SAMSUNG	
IC201	A4008-1181	IC;KA8334 QFP 60PIN STICK	
L201	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
Q201	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q202	A4050-0001	TR-GENERAL;2SD1468SQ 300MW 0.5MA 150MHZ 30V SI/NPN	
Q203	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
R201	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R202	A1020-0824	R-CHIP;RH 1/8 BS 471-J 20X12	
R203	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	
R204	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R205	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R206	A1020-0789	R-CHIP;RH 1/8 BS 271-J 20X12	
R207	61048-177-104	R-CARBON;RD 1/8 T 104-J	
R208	A1020-0825	R-CHIP;RH 1/8 BS 473-J 20X12	
[illegible]	[illegible]	R-CHIP;RH 1/8 BS [illegible]-J 20X12	
R211	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R212	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R213	A1020-0825	R-CHIP;RH 1/8 BS 473-J 20X12	
R214	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	

Loca.No	Part No	Description & Specification	Remark
R215	61048-177-473	R-CARBON;RD 1/8 T 473-J	
R216	A1020-0544	R-CHIP;RH 1/8 CS 104-J 20X12 RD3A2BY104J	
R217	A1020-0795	R-CHIP;RH 1/8 BS 363-J 20X12	
R220	A1020-0544	R-CHIP;RH 1/8 CS 104-J 20X12 RD3A2BY104J	
R221	A1020-0442	R-CHIP;RH 1/8 BS 224-J 20X12 RD3A2BY224J	
R222	61048-177-684	R-CARBON;RD 1/8 T 684-J	
R223	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	
R224	A1020-0825	R-CHIP;RH 1/8 BS 473-J 20X12	
R225	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	
R226	A1020-0808	R-CHIP;RH 1/8 BS 564-J 20X12	
R227	61048-177-393	R-CARBON;RD 1/8 T 393-J	
R228	A1020-0790	R-CHIP;RH 1/8 BS 273-J 20X12	
R229	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	
R230	A1020-0791	R-CHIP;RH 1/8 BS 274-J 20X12	
R232	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R234	A1020-0329	R-CHIP;RH 1/8 BS 153-J 20X12 RD3A2BY153J	
R235	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R236	A1020-0791	R-CHIP;RH 1/8 BS 274-J 20X12	
R237	A1020-0321	R-CHIP;RH 1/8 BS 333-J 20X12 RD3A2BY333J	
R239	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R241	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R242	A1020-0323	R-CHIP;RH 1/8 BS 272-J 20X12 RD3A2BY272J	
R243	61048-177-432	R-CARBON;RD 1/8 T 432-J	
R244	61048-177-222	R-CARBON;RD 1/8 T 222-J	
R247	A1020-0789	R-CHIP;RH 1/8 BS 271-J 20X12	
R251	A1020-0774	R-CHIP;RH 1/8 BS 123-J 20X12	
R254	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R255	61048-177-303	R-CARBON;RD 1/8 T 303-J	
R256	61048-177-433	R-CARBON;RD 1/8 T 433-J	
R258	A1020-0449	R-CHIP;RH 1/8 BS 000-J 20X12 CROSS CONDUCTOR RD3A2	
R259	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R260	61048-177-563	R-CARBON;RD 1/8 T 563-J	
R262	61048-177-103	R-CARBON;RD 1/8 T 103-J	
W330	61048-177-222	R-CARBON;RD 1/8 T 222-J	
VIDEO PARTS			
C305	A1020-0449	R-CHIP;RH 1/8 BS 000-J 20X12 CROSS CONDUCTOR RD3A2	
C307	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C308	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C310	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C311	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C312	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C314	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)	
C315	B1104-0625	C-ELEC;CE 04 -40/85 16V T 010-M 16SILM	
C316	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C319	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C320	A1100-0442	C-CERAMIC,CHIP;CC OB SL 50V 100-C 20X12 UCN053SL10	
C321	61407-117-154	C-CERAMIC.AXIAL;CAX B TAPG 50V 151K-T	
C322	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C323	A1100-0972	C-CERAMIC,CHIP;CC OB SL 50V 270-J 20X12 UCN053SL27	
C324	A1100-0440	C-CERAMIC,CHIP;CK OB SL 50V 120-J 20X12 UCN053SL1	
C326	A1100-0445	C-CERAMIC,CHIP;CK OB SL 50V 470-J 20X12 UCN053SL47	
C327	61407-117-184	C-CERAMIC.AXIAL;CAX B TAPG 50V 181-K	
C328	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C329	A1100-0532	C-CERAMIC,CHIP;CC OB SL 50V 220-J 20X12 UCN053SL22	
C330	A1100-0972	C-CERAMIC,CHIP;CC OB SL 50V 270-J 20X12 UCN053SL27	
C333	61453-131-391	C-CERAMIC.CHIP;0805 5A 391JAT MA	
C334	A1100-0446	C-CERAMIC,CHIP;CK OB SL 50V 050-C 20X12/UCN053 SL0	
C335	61453-130-223	C-CERAMIC.CHIP;0805 5C 223KAT MA	
C336	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C338	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C339	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C340	A1104-0612	C-ELEC;CE 04 -40/85 10V T 470-M SRE 6.3X5 47UF	
C341	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C342	A1100-0446	C-CERAMIC,CHIP;CK OB SL 50V 050-C 20X12/UCN053 SL0	

Loca.No	Part No	Description & Specification	Remark
C343	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C344	61407-117-228	C-CERAMIC.AXIAL;CK OA F 25V 223Z/F 25V 223ZT	
C345	A1100-0960	C-CERAMIC.CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C346	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C348	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C349	A1100-0135	C-CERAMIC,CHIP;CK 73 X7R 50V T 473-K C2012 21B473K	
C350	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C351	A1104-0612	C-ELEC;CE 04 -40/85 10V T 470-M SRE 6.3X5 47UF	
C352	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C353	A1100-0135	C-CERAMIC,CHIP;CK 73 X7R 50V T 473-K C2012 21B473K	
C354	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C355	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C356	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C357	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C358	A1100-0135	C-CERAMIC,CHIP;CK 73 X7R 50V T 473-K C2012 21B473K	
C359	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C360	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C361	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C362	61454-139-201	C-CERAMIC.CHIP;0805 5A 201 JAT MA	
C364	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C365	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C366	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C367	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C368	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C369	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C370	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C371	A1100-0972	C-CERAMIC,CHIP;CC OB SL 50V 270-J 20X12 UCN053SL27	
C374	A1104-0608	C-ELEC;CE 04 -25/85 50V T 010-M SRE 3X5	
C375	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C376	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C377	A1104-0612	C-ELEC;CE 04 -40/85 10V T 470-M SRE 6.3X5 47UF	
C380	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C381	61453-130-121	C-CERAMIC.CHIP;0805 5A 121JAT MA	
C382	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C387	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C388	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C390	A1100-0447	C-CERAMIC,CHIP;CK OB A 50V 121-K 20X12 UCN053 A12	
C391	A1100-0507	C-CERAMIC,CHIP;CC OB SL 50V 180-J 20X12 UCN053SL18	
C392	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C393	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C394	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C396	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C399	61453-131-821	C-CERAMIC CHIP;0805 5A 820JAT MA	
CN301	B6010-0851	CONNECTOR-WAFER;W323-HLEM04S-1 BLK	
D302	62169-406-482	DIODE;1N4148 SAMSUNG	
D304	62169-406-482	DIODE;1N4148 SAMSUNG	
D307	62169-406-482	DIODE;1N4148 SAMSUNG	
D318	62169-406-482	DIODE;1N4148 SAMSUNG	
D350	62169-406-482	DIODE;1N4148 SAMSUNG	
D353	62169-406-482	DIODE;1N4148 SAMSUNG	
IC301	B4012-0165	IC-LINEAR;LA7411 DIP PRE-AMP	
IC302	B4012-0276	IC-LINEAR;LA7439 DIP	
IC303	B4012-0277	IC-LINEAR;LC89970 DIP	
L302	62427-812-271	COIL-PEAKING;EL0606RA 270uH-J	
L303	62427-020-680	COIL PEAKING.AXIAL;LAL02TB 680J TAPG	
L304	62427-020-220	COIL PEAKING.AXIAL;LAL02TB 220J TAPG	
L305	62427-020-330	COIL PEAKING.AXIAL;LAL02TB 330J TAPG	
L307	62427-020-560	COIL PEAKING.AXIAL;LAL02TB 560J TAPG	
L308	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L309	62427-812-331	COIL-PEAKING;EL0606RA 330uH-J	
L314	62427-020-330	COIL PEAKING.AXIAL;LAL02TB 330J TAPG	
L315	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J	
L316	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L320	62427-020-151	COIL PEAKING.AXIAL;LAL02TB 151J TAPG	

Loca.No	Part No	Description & Specification	Remark
L321	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L322	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L350	62427-010-229	COIL-PEAKING.AXIAL;LAL02 TB 2.2UH TAPG	
L396	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
Q301	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q302	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q303	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q304	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q307	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q308	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q319	62137-701-020	TRANSISTOR;KSR 2001 TAPG	
Q323	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q324	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q325	62129-101-130	TRANSISTOR.CHIP;KSR 2102 (REEL)	
Q326	62129-101-173	TRANSISTOR.CHIP;KSR 1104(REEL)	
Q327	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q328	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)	
R301	A1020-0782	R-CHIP;RH 1/8 BS 203-J 20X12	
R304	A1020-0544	R-CHIP;RH 1/8 CS 104-J 20X12 RD3A2BY104J	
R305	61048-177-563	R-CARBON;RD 1/8 T 563-J	
R307	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R309	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R310	A1020-0785	R-CHIP;RH 1/8 BS 241-J 20X12	
R311	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R312	A1020-0789	R-CHIP;RH 1/8 BS 271-J 20X12	
R314	A1020-0337	R-CHIP;RH 1/8 BS 821-J 20X12 RD3A2BY821J	
R315	A1020-0331	R-CHIP;RH 1/8 BS 221-J 20X12 RD3A2BY221J	
R316	A1020-0774	R-CHIP;RH 1/8 BS 123-J 20X12	
R317	A1020-0334	R-CHIP;RH 1/8 BS 391-J 20X12 RD3A2BY391J	
R318	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R321	A1020-0336	R-CHIP;RH 1/8 BS 561-J 20X12 RD3A2BY561J	
R323	A1020-0334	R-CHIP;RH 1/8 BS 391-J 20X12 RD3A2BY391J	
R324	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R325	A1020-0323	R-CHIP;RH 1/8 BS 272-J 20X12 RD3A2BY272J	
R326	A1020-0723	R-CHIP;RH 1/8 BS 681-J 20X12 RD3A2BY681J	
R327	A1020-0449	R-CHIP;RH 1/8 BS 000-J 20X12 CROSS CONDUCTOR RD3A2	
R328	A1020-0790	R-CHIP;RH 1/8 BS 273-J 20X12	
R329	A1020-0431	R-CHIP;RH 1/8 BS 223-J 20X12 RD3A2BY223J	
R330	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R331	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R335	61048-177-152	R-CARBON;RD 1/8 T 152-J	
R336	A1020-0325	R-CHIP;RH 1/8 BS 182-J 20X12 RD3A2BY182J	
R341	A1020-0339	R-CHIP;RH 1/8 BS 822-J 20X12 RD3A2BY822J	
R342	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R344	A1020-0325	R-CHIP;RH 1/8 BS 182-J 20X12 RD3A2BY182J	
R345	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R346	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R349	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R350	A1020-0333	R-CHIP;RH 1/8 BS 823-J 20X12 RD3A2BY823J	
R351	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R352	A1020-0786	R-CHIP;RH 1/8 BS 242-J 20X12	
R354	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R366	A1020-0338	R-CHIP;RH 1/8 BS 511-J 20X12 RD3A2BY511J	
R369	61048-177-561	R-CARBON;RD 1/8 T 561-J	
R370	A1020-0336	R-CHIP;RH 1/8 BS 561-J 20X12 RD3A2BY561J	
R371	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R372	61048-177-242	R-CARBON;RM 1/8 T 242-J	
R373	A1020-0782	R-CHIP;RH 1/8 BS 203-J 20X12	
R374	A1020-0782	R-CHIP;RH 1/8 BS 203-J 20X12	
R375	A1020-0449	R-CHIP;RH 1/8 BS 000-J 20X12 CROSS CONDUCTOR RD3A2	
R376	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R377	A1020-0337	R-CHIP;RH 1/8 BS 821-J 20X12 RD3A2BY821J	
R378	A1020-0790	R-CHIP;RH 1/8 BS 273-J 20X12	
R379	A1020-0331	R-CHIP;RH 1/8 BS 221-J 20X12 RD3A2BY221J	

Loca.No	Part No	Description & Specification	Remark
R380	A1020-0537	R-CHIP;RH 1/8 BS 202-J 20X12 RD3A2BY202J	
R381	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R382	A1020-0317	R-CHIP;RH 1/8 BS 392-J 20X12 RD3A2BY392J	
R383	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R384	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R385	A1020-0804	R-CHIP;RH 1/8 BS 512-J 20X12	
R386	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
X301	B1280-0169	CRYSTAL;4.433619MHZ HC-49/U-S 15PPM SERIES TYPE	
TUNER PARTS			
C401	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C402	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C403	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C404	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C405	61507-121-511	C-POLYESTER;CQ921M TAPG 50V 223-J	
C406	61637-208-229	C-ELEC;CEAP 50V 2.2M SA (5X11)	
C407	61617-405-470	C-ELECTROLYTIC;CE04W TAPG 25V 47M(RSS 6.3X7)	
C408	61637-208-229	C-ELEC;CEAP 50V 2.2M SA (5X11)	
C409	A1100-0960	C-CERAMIC,CHIP;CK OB Y5V 16V 223-Z 20X12 ECN153F22	
C410	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C411	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C412	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C414	61453-131-101	C-CERAMIC.CHIP;0805 5A 101JAT MA	
C415	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C416	A1104-0611	C-ELEC;CE 04 -40/85 16V T 100-M SRE 3.5X5 10UF	
C417	61617-405-470	C-ELECTROLYTIC;CE04W TAPG 25V 47M(RSS 6.3X7)	
C418	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C419	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C420	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C422	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C423	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)	
C424	B1102-0125	C-FILM;CQ 982 P 50V T 104-J·40/85 ECQV1H104JZ3	
C425	B1102-0125	C-FILM;CQ 982 P 50V T 104-J 40/85 ECQV1H104JZ3	
C426	B1102-0125	C-FILM;CQ 982 P 50V T 104-J 40/85 ECQV1H104JZ3	
C427	B1102-0125	C-FILM;CQ 982 P 50V T 104-J 40/85 ECQV1H104JZ3	
C428	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C429	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C430	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C431	A1100-0444	C-CERAMIC,CHIP;CK OB Y 25V 102-M 20X12 TCN053Y102M	
C432	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C433	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C434	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C450	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C451	A1100-0433	C-CERAMIC,CHIP;CK OB A 50V 101-K 20X12/UCN053 A101	
D401	62169-406-482	DIODE;1N4148 SAMSUNG	
FL401	B1245-0034	FILTER-SAW;TSF5316 PAL-X VIF/SIF ST	
FL402	B1243-0064	FILTER-CERAMIC;BP 5.5MHZ EFCT5R5YS5C	
FL403	B1243-0062	FILTER-CERAMIC;TR 5.5MHZ EFCWS5504A	
IC401	B4012-0046	IC-LINEAR;TDA9800 DIP NEG DEMOD	
IC402	62109-201-281	IC;KA7809	
IC403	62119-401-370	IC;LA7920	
IC404	62119-501-561	IC-L;KA33V TAPG	
J401	66449-0002-00	CABLE-IF;SD SD-C1238-3 L30	
L401	62427-020-010	COIL PEAKING.AXIAL;LAL02TB 1R0J TAPG	
L402	62427-812-139	COIL-PEAKING;EL0606RA 1.3uH-K	
L403	62427-812-150	COIL-PEAKING;EL0606RA 15uH-J	
L404	66639-0003-00	FERRITE-BEAD INDUCTOR;NI-ZN FERRITE K150 B13857	
Q401	62137-702-010	TRANSISTOR;KTC 3197-AT(TAPG)	
Q402	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q403	62137-302-441	TRANSISTOR;KSC 2328-Y TAPG	
Q404	62137-701-012	TRANSISTOR;KSR 1003 TAPG	
Q405	62147-401-835	TRANSISTOR;KSA 928A-Y TAPG	
Q408	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
R401	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R402	61048-177-271	R-CARBON;RD 1/8 T 271-J	

Loca.No	Part No	Description & Specification	Remark
R403	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R404	A1020-0455	R-CHIP;RH 1/8 BS 152-J 20X12 RD3A2BY152J	
R405	A1020-0334	R-CHIP;RH 1/8 BS 391-J 20X12 RD3A2BY391J	
R406	61048-177-470	R-CARBON;RD 1/8 T 470-J	
R408	A1020-0449	R-CHIP;RH 1/8 BS 000-J 20X12 CROSS CONDUCTOR RD3A2	
R409	A1020-0543	R-CHIP;RH 1/8 CS 101-J 20X12 RD3A2BY101J	
R410	A1020-0339	R-CHIP;RH 1/8 BS 822-J 20X12 RD3A2BY822J	
R411	A1020-0323	R-CHIP;RH 1/8 BS 272-J 20X12 RD3A2BY272J	
R412	A1020-0322	R-CHIP;RH 1/8 BS 222-J 20X12 RD3A2BY222J	
R414	A1020-0537	R-CHIP;RH 1/8 BS 202-J 20X12 RD3A2BY202J	
R415	61048-177-331	R-CARBON;RD 1/8 T 331-J	
R416	61048-177-241	R-CARBON;RD 1/8 T 241-J	
R418	61048-177-433	R-CARBON;RD 1/8 T 433-J	
R419	A1020-0336	R-CHIP;RH 1/8 BS 561-J 20X12 RD3A2BY561J	
R420	A1020-0431	R-CHIP;RH 1/8 BS 223-J 20X12 RD3A2BY223J	
R421	A1020-0431	R-CHIP;RH 1/8 BS 223-J 20X12 RD3A2BY223J	
R422	A1020-0777	R-CHIP;RH 1/8 BS 151-J 20X12	
R423	A1020-0777	R-CHIP;RH 1/8 BS 151-J 20X12	
R424	A1020-0331	R-CHIP;RH 1/8 BS 221-J 20X12 RD3A2BY221J	
R426	A1006-0799	R-METAL FILM;RM 1/4 T 122-J SFR25	
R427	61048-177-223	R-CARBON;RD 1/8 T 223-J	
R428	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R429	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R430	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R431	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R432	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R433	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R434	61048-177-335	R-CARBON;RD 1/8 T 335-J	
R435	A1020-0834	R-CHIP;RH 1/8 BS 335-J 20X12	
R436	A1020-0834	R-CHIP;RH 1/8 BS 335-J 20X12	
R437	A1020-0333	R-CHIP;RH 1/8 BS 823-J 20X12 RD3A2BY823J	
R438	A1020-0333	R-CHIP;RH 1/8 BS 823-J 20X12 RD3A2BY823J	
R439	A1020-0431	R-CHIP;RH 1/8 BS 223-J 20X12 RD3A2BY223J	
R440	A1020-0431	R-CHIP;RH 1/8 BS 223-J 20X12 RD3A2BY223J	
R441	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R442	61048-177-152	R-CARBON;RD 1/8 T 152-J	
R443	A1006-0804	R-METAL FILM;RM 1/4 T 221-J SFR25	
R444	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R445	61048-177-222	R-CARBON;RD 1/8 T 222-J	
R446	A1006-0816	R-METAL FILM;RM 1/4 T 561-J SFR25	
R447	A1006-0816	R-METAL FILM;RM 1/4 T 561-J SFR25	
R450	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
TL401	A1197-0004	TRANS-DET;9MM 0UH BLK 8PF 77.9MHZ M7T1 STICK	
U401	67189-0036-00	CONVERTER-RF;MDLK6D955A PAL G	
U402	B1292-0063	TUNER;TEKE4-092A 104CH PAL VS	
VR401	B1054-0230	VR-SEMI;EVN-CYAA03-BE4 22KB CARBON T TOP 2.5W 50V	
ZD401	62169-403-821	DIODE-ZENER;MTZ 5.1B	
I/O PARTS (1 SCART ONLY)			
C4301	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4303	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 101K-T	
C4304	61453-131-101	C-CERAMIC.CHIP;0805 5A 101JAT MA	
C4309	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C4310	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4311	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)	
C4312	A1100-0433	C-CERAMIC,CHIP;CK OB A 50V 101-K 20X12/UCN053 A101	
C4314	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4315	61637-502-471	C-ELEC;CEAP 6.3V 470M SG(8X11.5)	
C4316	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4317	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 101K-T	
C4318	A1100-0444	C-CERAMIC,CHIP;CK OB Y 25V 102-M 20X12 TCN053Y102M	
C4319	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4320	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4321	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4322	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	

Loca.No	Part No	Description & Specification	Remark
C4325	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C4326	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C4330	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4331	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C4332	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C4334	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C4335	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C4336	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C4341	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C4344	A1100-0438	C-CERAMIC,CHIP;CK OB A 50V 680-K 20X12 UCN053 A68	
D4301	62169-406-482	DIODE;1N4148 SAMSUNG	
D4303	62169-406-482	DIODE;1N4148 SAMSUNG	
D4307	62169-406-482	DIODE;1N4148 SAMSUNG	
D4310	62169-406-482	DIODE;1N4148 SAMSUNG	
D4311	62169-406-482	DIODE;1N4148 SAMSUNG	
IC4302	62119-401-310	IC;KA8403	
IC4303	62119-401-310	IC;KA8403	
JC4301	A3040-0189	JACK-SCART:DSR-9408 21P BLK	
L4301	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L4302	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L4303	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
Q4301	62137-103-380	TRANSISTOR:KSA 733-Y TAPG	
Q4307	62137-103-380	TRANSISTOR:KSA 733-Y TAPG	
Q4310	62137-701-020	TRANSISTOR:KSR 2001 TAPG	
Q4313	62137-701-013	TRANSISTOR:KSR 1004 TAPG	
R4301	61048-177-153	R-CARBON;RD 1/8 T 153-J	
R4312	61048-177-561	R-CARBON;RD 1/8 T 561-J	
R4313	61048-177-152	R-CARBON;RD 1/8 T 152-J	
R4314	A1006-0817	R-METAL FILM;RM 1/4 T 680-J SFR25	
R4316	61048-177-750	R-CARBON;RD 1/8 T 750-J	
R4317	61048-177-681	R-CARBON;RD 1/8 T 681-J	
R4318	61048-177-222	R-CARBON;RD 1/8 T 222-J	
R4319	A1006-0818	R-METAL FILM;RM 1/4 T 681-J SFR25	
R4322	61048-177-821	R-CARBON;RD 1/8 T 821-J	
R4330	A1006-0818	R-METAL FILM;RM 1/4 T 681-J SFR25	
R4331	61048-177-562	R-CARBON;RD 1/8 T 562-J	
R4335	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R4336	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R4340	A1006-0808	R-METAL FILM;RM 1/4 T 331-J SFR25	
W282	61048-177-102	R-CARBON;RD 1/8 T 102-J	
ZD4301	62169-403-826	DIODE-ZENER;MTZ 12B	
I/O PARTS (2 SCART ONLY)			
C4301	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4303	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 101K-T	
C4305	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4306	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4307	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 101K-T	
C4308	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C4309	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C4310	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4311	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)	
C4312	A1100-0433	C-CERAMIC,CHIP;CK OB A 50V 101-K 20X12/UCN053 A101	
C4314	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4315	61637-502-471	C-ELEC;CEAP 6.3V 470M SG(8X11.5)	
C4316	A1100-0970	C-CERAMIC,CHIP;CK OB Y5P 50V 820-K 20X12 UCN053A82	
C4317	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 101K-T	
C4318	A1100-0444	C-CERAMIC,CHIP;CK OB Y 25V 102-M 20X12 TCN053Y102M	
C4319	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4320	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4321	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4322	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C4323	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4324	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4325	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	

Loca.No	Part No	Description & Specification	Remark
C4326	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C4328	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C4329	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C4330	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C4331	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C4332	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C4333	A1100-0958	C-CERAMIC,CHIP;CK OB Y5V 16V 103-Z 20X12 ECN053F10	
C4334	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C4335	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C4340	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C4344	A1100-0438	C-CERAMIC,CHIP;CK OB A 50V 680-K 20X12 UCN053 A68	
D4301	62169-406-482	DIODE;1N4148 SAMSUNG	
D4302	62169-406-482	DIODE;1N4148 SAMSUNG	
D4303	62169-406-482	DIODE;1N4148 SAMSUNG	
D4304	62169-406-482	DIODE;1N4148 SAMSUNG	
D4305	62169-406-482	DIODE;1N4148 SAMSUNG	
D4306	62169-406-482	DIODE;1N4148 SAMSUNG	
D4308	62169-406-482	DIODE;1N4148 SAMSUNG	
D4309	62169-406-482	DIODE;1N4148 SAMSUNG	
D4310	62169-406-482	DIODE;1N4148 SAMSUNG	
D4311	62169-406-482	DIODE;1N4148 SAMSUNG	
IC4301	A4012-0288	IC-LINEAR;KA8119 DIP	
JC4301	A3040-0148	JACK-SCART;DSR-9103(S) 42P BLK/BLU	
L4301	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L4302	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
L4303	62427-020-150	COIL PEAKING.AXIAL;LAL02TB 150J TAPG	
Q4301	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q4302	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q4303	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q4305	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q4306	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q4307	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q4308	62137-103-380	TRANSISTOR;KSA 733-Y TAPG	
Q4310	62137-701-020	TRANSISTOR;KSR 2001 TAPG	
Q4313	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
Q4320	62137-302-740	TRANSISTOR;KSC 945-Y TAPG	
Q4321	62129-101-080	TRANSISTOR.CHIP;KSA 812-G(REEL)	
R4301	61048-177-563	R-CARBON;RD 1/8 T 563-J	
R4302	61048-177-221	R-CARBON;RD 1/8 T 221-J	
R4303	61048-177-221	R-CARBON;RD 1/8 T 221-J	
R4304	61048-177-471	R-CARBON;RD 1/8 T 471-J	
R4305	61048-177-750	R-CARBON;RD 1/8 T 750-J	
R4306	61048-177-750	R-CARBON;RD 1/8 T 750-J	
R4310	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R4311	61048-177-271	R-CARBON;RD 1/8 T 271-J	
R4312	61048-177-561	R-CARBON;RD 1/8 T 561-J	
R4313	61048-177-152	R-CARBON;RD 1/8 T 152-J	
R4314	A1006-0817	R-METAL FILM;RM 1/4 T 680-J SFR25	
R4316	61048-177-750	R-CARBON;RD 1/8 T 750-J	
R4317	61048-177-471	R-CARBON;RD 1/8 T 471-J	
R4318	61048-177-152	R-CARBON;RD 1/8 T 152-J	
R4319	A1006-0818	R-METAL FILM;RM 1/4 T 681-J SFR25	
R4320	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R4321	61048-177-103	R-CARBON;RD 1/8 T 103-J	
R4322	61048-177-821	R-CARBON;RD 1/8 T 821-J	
R4323	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R4324	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R4327	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R4328	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R4330	A1006-0818	R-METAL FILM;RM 1/4 T 681-J SFR25	
R4331	61048-177-562	R-CARBON;RD 1/8 T 562-J	
R4335	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R4336	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R4340	A1006-0811	R-METAL FILM;RM 1/4 T 391-J SFR25	

Loca.No	Part No	Description & Specification	Remark
R4341	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
W282	61048-177-102	R-CARBON;RD 1/8 T 102-J	
ZD4301	62169-403-826	DIODE-ZENER;MTZ 12B	
AUDIO PARTS			
C501	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C502	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C503	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA	
C505	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C506	61637-208-339	C-ELEC;CEAP 50V 3.3M SA(5X11)	
C507	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)	
C508	61454-142-123	C-CERAMIC.CHIP;0805 5C 123KAT MA	
C509	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C510	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)	
C511	61637-204-330	C-ELEC;CEAP 16V 33M SA(5X11)	
C512	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)	
C513	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA	
C514	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA	
C515	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C516	A1100-0024	C-CERAMIC,CHIP;CK 73 X7R 50V T 822-K C2012 822	
C517	A1100-0869	C-CERAMIC,CHIP;CK 73 X7R 50V T 682-K C2012 CL21B68	
C518	A1100-0925	C-CERAMIC,CHIP;CG OB X7S 12V 682-M 20X12 BCN053Y68	
C524	61454-142-122	C-CERAMIC.CHIP;0805 5C 122KAT MA	
C527	B1102-0258	C-FILM;CQ 922 M 100V T 473-J ECQB1473JF3	
C528	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)	
C530	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C531	A1100-0433	C-CERAMIC,CHIP;CK OB A 50V 101-K 20X12/UCN053 A101	
CN501	B6010-0861	CONNECTOR-WAFER;W323-HLEM06S-1 BLK	
CN502	B6010-0436	CONNECTOR-WAFER;TMC-E02X-A1 BLK STICK	
D501	62169-406-482	DIODE;1N4148 SAMSUNG	
FL501	A1208-0004	TRANS-OSC;126QN-KS442321YCT 6.3X5MM 920UH BIAS BLK	
IC501	B4012-0273	IC-LINEAR;LA7286 DIP	
L501	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L502	62427-813-153	COIL-PEAKING;EL0607RA 15mH-J	
Q501	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG	
Q506	62137-701-013	TRANSISTOR;KSR 1004 TAPG	
R501	61048-177-131	R-CARBON;RD 1/8 T 131-J	
R503	A1020-0793	R-CHIP;RH 1/8 BS 334-J 20X12	
R504	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R505	A1020-0317	R-CHIP;RH 1/8 BS 392-J 20X12 RD3A2BY392J	
R506	61048-177-225	R-CARBON;RD 1/8 T 225-J	
R507	61048-177-433	R-CARBON;RD 1/8 T 433-J	
R508	61048-177-682	R-CARBON;RD 1/8 T 682-J	
R509	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R510	A1020-0322	R-CHIP;RH 1/8 BS 222-J 20X12 RD3A2BY222J	
R511	A1020-0327	R-CHIP;RH 1/8 BS 562-J 20X12 RD3A2BY562J	
R512	A1020-0537	R-CHIP;RH 1/8 BS 202-J 20X12 RD3A2BY202J	
R515	A1020-0825	R-CHIP;RH 1/8 BS 473-J 20X12	
R516	61048-177-479	R-CARBON;RD 1/8 T 4R7-J	
R517	A1020-0335	R-CHIP;RH 1/8 BS 472-J 20X12 RD3A2BY472J	
R518	61048-177-470	R-CARBON;RD 1/8 T 470-J	
R519	61048-177-181	R-CARBON;RD 1/8 T 181-J	
R520	A1020-0431	R-CHIP;RH 1/8 BS 223-J 20X12 RD3A2BY223J	
R528	A1020-0344	R-CHIP;RH 1/8 BS 122-J 20X12 RD3A2BY122J	
R532	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
V.P.S PARTS			
C6101	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C6102	61453-130-151	C-CERAMIC.CHIP;0805 5A 151JAT MA	
C6103	61453-130-333	C-CERAMIC.CHIP;0805 5C 333MAT MA	
[illegible]	61453-130-333	C-CERAMIC.CHIP;0805 5C 333MAT MA	
IC6101	62119-103-700	IC;SDA5642-5 DIP VPS	
R6101	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R6102	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R6103	A1020-0544	R-CHIP;RH 1/8 CS 104-J 20X12 RD3A2BY104J	
R6106	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	

Loca.No	Part No	Description & Specification	Remark
R6110	A1020-0316	R-CHIP;RH 1/8 BS 682-J 20X12 RD3A2BY682J	
R6111	A1020-0322	R-CHIP;RH 1/8 BS 222-J 20X12 RD3A2BY222J	
R6112	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
R6113	A1020-0815	R-CHIP;RH 1/8 BS 824-J 20X12	
P.D.C PARTS			
C6101	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C6102	61453-130-151	C-CERAMIC.CHIP;0805 5A 151JAT MA	
C6104	A1100-0928	C-CERAMIC,CHIP;CG OB X7S 25V 222-M 20X12 TCN053Y22	
C6105	61453-130-333	C-CERAMIC.CHIP;0805 5C 333MAT MA	
C6106	A1104-0515	C-ELEC;CE 04 C 50V T R33-M SM-BP(S)	
IC6101	B4012-0314	IC-LINEAR;SDA5648 DIP	
R6101	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R6102	61048-177-101	R-CARBON;RD 1/8 T 101-J	
R6103	A1020-0544	R-CHIP;RH 1/8 CS 104-J 20X12 RD3A2BY104J	
R6106	A1020-0343	R-CHIP;RH 1/8 BS 105-J 20X12 RD3A2BY105J	
R6107	A1020-0835	R-CHIP;RH 1/8 BS 125-J 20X12	
R6108	A1020-0835	R-CHIP;RH 1/8 BS 125-J 20X12	
R6109	A1020-0316	R-CHIP;RH 1/8 BS 682-J 20X12 RD3A2BY682J	
R6110	A1020-0316	R-CHIP;RH 1/8 BS 682-J 20X12 RD3A2BY682J	
R6111	A1020-0322	R-CHIP;RH 1/8 BS 222-J 20X12 RD3A2BY222J	
R6112	A1020-0441	R-CHIP;RH 1/8 BS 103-J 20X12 RD3A2BY103J	
O.S.D PARTS			
C901	61637-203-101	C-ELEC;CEAP 10V 100M SA(6X11)	
C902	61407-117-101	C-CERAMIC.AXIAL;UP050F 104Z	
C903	A1100-0447	C-CERAMIC,CHIP;CK OB A 50V 121-K 20X12 UCN053 A12	
C904	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)	
C905	61407-117-680	C-CERAMIC.AXIAL;CAX SL TAPG 50V 680-J	
C906	61407-117-680	C-CERAMIC.AXIAL;CAX SL TAPG 50V 680-J	
C907	A1100-0447	C-CERAMIC,CHIP;CK OB A 50V 121-K 20X12 UCN053 A12	
C908	A1100-0447	C-CERAMIC,CHIP;CK OB A 50V 121-K 20X12 UCN053 A12	
C909	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 101K-T	
C910	61637-208-478	C-ELEC;CEAP 50V 0.47M SA(5X11)	
C911	61407-117-561	C-CERAMIC.AXIAL;CAX B TAPG 50V 561K-T	
C913	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)	
C914	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)	
C915	A1100-0440	C-CERAMIC,CHIP;CK OB SL 50V 120-J 20X12 UCN053SL1	
C916	61637-203-101	C-ELEC;CEAP 10V 100M SA(6X11)	
C917	A1100-0961	C-CERAMIC,CHIP;CK 73 Y5V 25V 104-Z C2010 UMK210F10	
C918	A1100-0941	C-CERAMIC,CHIP;CC OB SL 50V 240-J 20X12 UCN053SL24	
C919	A1100-0972	C-CERAMIC,CHIP;CC OB SL 50V 270-J 20X12 UCN053SL27	
C922	61453-130-223	C-CERAMIC.CHIP;0805 5C 223KAT MA	
D901	62169-406-482	DIODE;1N4148 SAMSUNG	
D902	62169-406-482	DIODE;1N4148 SAMSUNG	
IC901	A4008-1180	IC;KS5514-03 24S DIP	
L901	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L902	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K	
L903	62427-020-011	COIL PEAKING.AXIAL;LAL02TB 100J TAPG	
L904	62427-020-101	COIL PEAKING.AXIAL;LAL02TB 101J TAPG	
R901	61048-177-224	R-CARBON;RD 1/8 T 224-J	
R902	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R903	A1020-0543	R-CHIP;RH 1/8 CS 101-J 20X12 RD3A2BY101J	
R904	61048-177-104	R-CARBON;RD 1/8 T 104-J	
R909	A1020-0774	R-CHIP;RH 1/8 BS 123-J 20X12	
R910	A1020-0449	R-CHIP;RH 1/8 BS 000-J 20X12 CROSS CONDUCTOR RD3A2	
R930	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R931	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R932	A1020-0320	R-CHIP;RH 1/8 BS 102-J 20X12 RD3A2BY102J	
R933	61048-177-472	R-CARBON;RD 1/8 T 472-J	
R934	61048-177-472	R-CARBON;RD 1/8 T 472-J	
R935	61048-177-472	R-CARBON;RD 1/8 T 472-J	
XT901	64539-012-543	CRYSTAL;17.734475M(20ppm)	

Loca.No	Part No	Description & Specification	Remark
670		ASSY F/TIMER	
	69571-302-215	SV-30XK/SEG	
	69571-302-225	SV-31XK/SEG	
	69571-302-209	SV-40XK/SEG	
C701	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)	
C702	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 103N-T	
C703	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)	
C704	61407-117-102	C-CERAMIC.AXIAL;CAX B TAPG 102K-T	
C714	61407-117-228	C-CERAMIC.AXIAL;CK OA F 25V 223Z/F 25V 223ZT	
C720	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)	
CN701	A6010-1365	CONNECTOR-WAFER;35234-2010 WHT MOLEX	
CN702	A6010-1365	CONNECTOR-WAFER;35234-2010 WHT MOLEX	
D708	62169-406-482	DIODE;1N4148 SAMSUNG	
D709	62169-406-482	DIODE;1N4148 SAMSUNG	
D731	62169-406-482	DIODE;1N4148 SAMSUNG	
D732	62169-406-482	DIODE;1N4148 SAMSUNG	
D733	62169-406-482	DIODE;1N4148 SAMSUNG	
D734	62169-406-482	DIODE;1N4148 SAMSUNG	
D735	62169-406-482	DIODE;1N4148 SAMSUNG	
D736	62169-406-482	DIODE;1N4148 SAMSUNG	
D737	62169-406-482	DIODE;1N4148 SAMSUNG	
D738	62169-406-482	DIODE;1N4148 SAMSUNG	
D739	62169-406-482	DIODE;1N4148 SAMSUNG	
D741	62169-406-482	DIODE;1N4148 SAMSUNG	
D742	62169-406-482	DIODE;1N4148 SAMSUNG	
D743	62169-406-482	DIODE;1N4148 SAMSUNG	
D744	62169-406-482	DIODE;1N4148 SAMSUNG	
D745	62169-406-482	DIODE;1N4148 SAMSUNG	
D747	62169-406-482	DIODE;1N4148 SAMSUNG	
DT701	A4153-0076	V.F.DISPLAY;SVV-9SS02 SV-80X	
LD701	62309-110-340	LED;GL-3HD7/GL3HD8	
Q701	62137-701-010	TRANSISTOR;KSR 1001 TAPG	
R701	61048-177-473	R-CARBON;RD 1/8 T 473-J	
R705	61048-177-102	R-CARBON;RD 1/8 T 102-J	
R706	A1006-0824	R-METAL FILM;RM 1/4 T 120-J 12R SFR25	
R711	61048-177-121	R-CARBON;RD 1/8 T 121-J	
RM701	A1294-0015	MODULE-REMOCON;GP1U781R/ASAN 38KHZ	
SW701	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW702	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW703	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW704	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW705	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW706	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW707	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW708	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW709	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW710	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW711	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW712	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW713	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW714	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW715	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW716	63599-016-070	SW-TACT;EVQ-QS2 05K	
SW726	63519-073-021	SW-SLIDE;SSS 322	
W725	A1006-0794	R-METAL FILM;RM 1/4 T 100-J 10R SFR25	
ZD701	62169-403-301	DIODE-ZENER;UZ 3.0B TAPG	
		REMOCON ASSY	
	V9099-633-210	SESA SV-30XK/SEG	
	V9099-633-218	SV-31XK/SEG	
	V9099-633-205	SV-40XK/SEG	
	64043-0166-00	DOOR-BATTERY;ABS94HB T2 D/GRY NR-3346	
CT1	61637-802-479	C-ELEC;CEAP 6.3V 4.7M SE(3X5)	
CT2	61453-131-101	C-CERAMIC.CHIP;0805 5A 101JAT MA	
CT3	61453-131-101	C-CERAMIC.CHIP;0805 5A 101JAT MA	

Loca.No	Part No	Description & Specification	Remark
ICT1	A4002-0389	IC-MCU;KS51810-05 DIP	
LDT1	A4150-0168	LED-INFRARED;SI5312-H NTR 940NM/1.4V	
QT1	A4050-0140	TR-GENERAL,CHIP;2SC2412KR 200MW 100MA 100MHZ 50V S	
RT1	61079-917-010	R-CHIP;RH C2012 CS 010-J	
XT01	64539-102-311	CERAMIC RESONATOR;CSB455EBL/KBR455BKTL	
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8. EXPLODED VIEW / PARTS LIST

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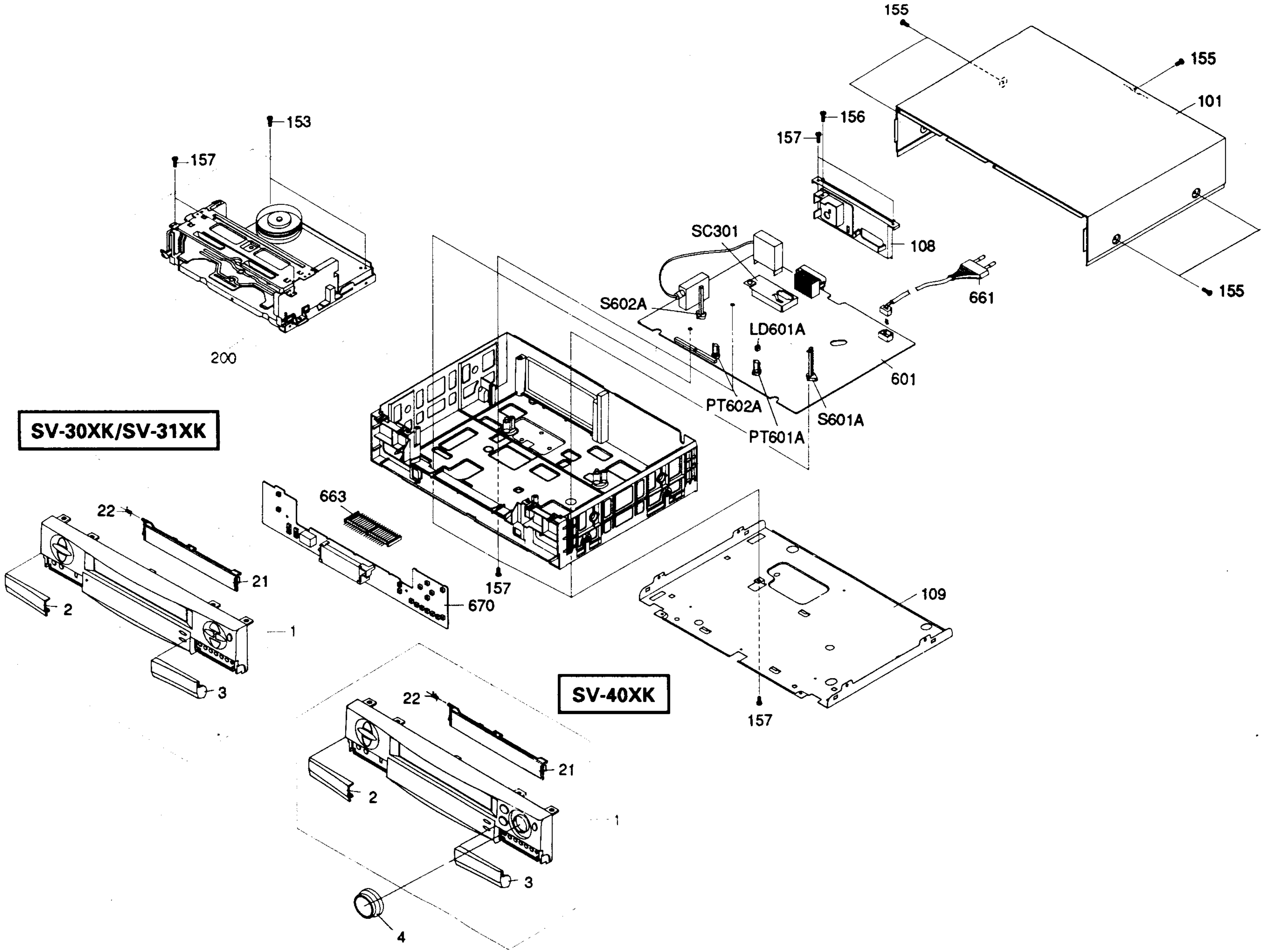
8-2. MECHANICAL PARTS (TOP SIDE) - - - - - - - - - - - 8-4

8-3. MECHANICAL PARTS (BOTTOM SIDE) - - - - - - - - 8-6

8-4. HOUSING ASSEMBLY - 8-8

8-1. INSTRUMENT ASSEMBLY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155
101
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156
157
108
661
SC301
S602A
LD601A
601
PT602A
S601A
PT601A
153
157
200
SV-30XK/SV-31XK
663
22
21
2
670
157
109
1
3
157
SV-40XK
22
21
2
1
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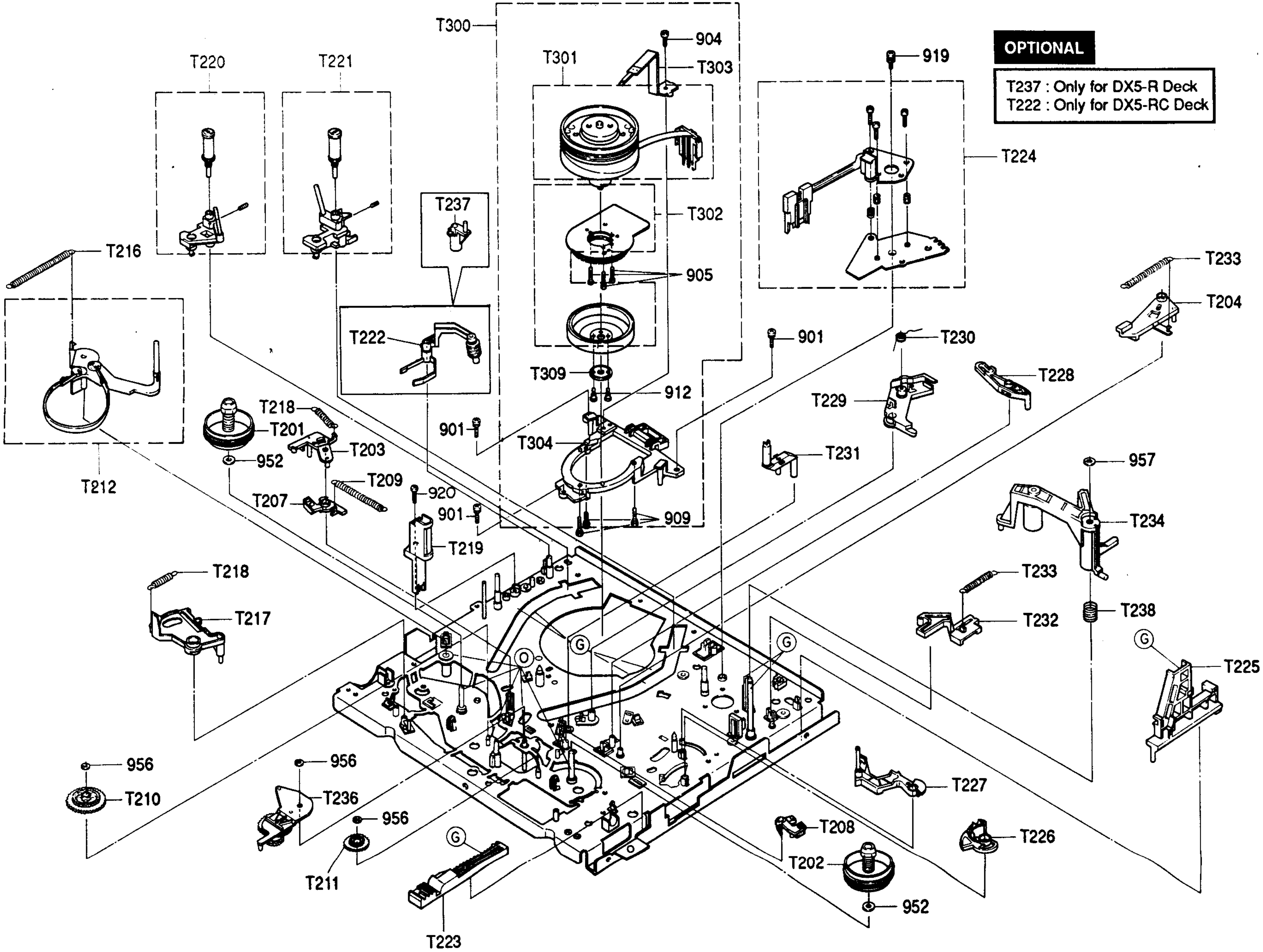
8-2. MECHANICAL PARTS (TOP SIDE)

OPTIONAL

T237 : Only for DX5-R Deck
T222 : Only for DX5-RC Deck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T210
T236
T227
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T211
T202
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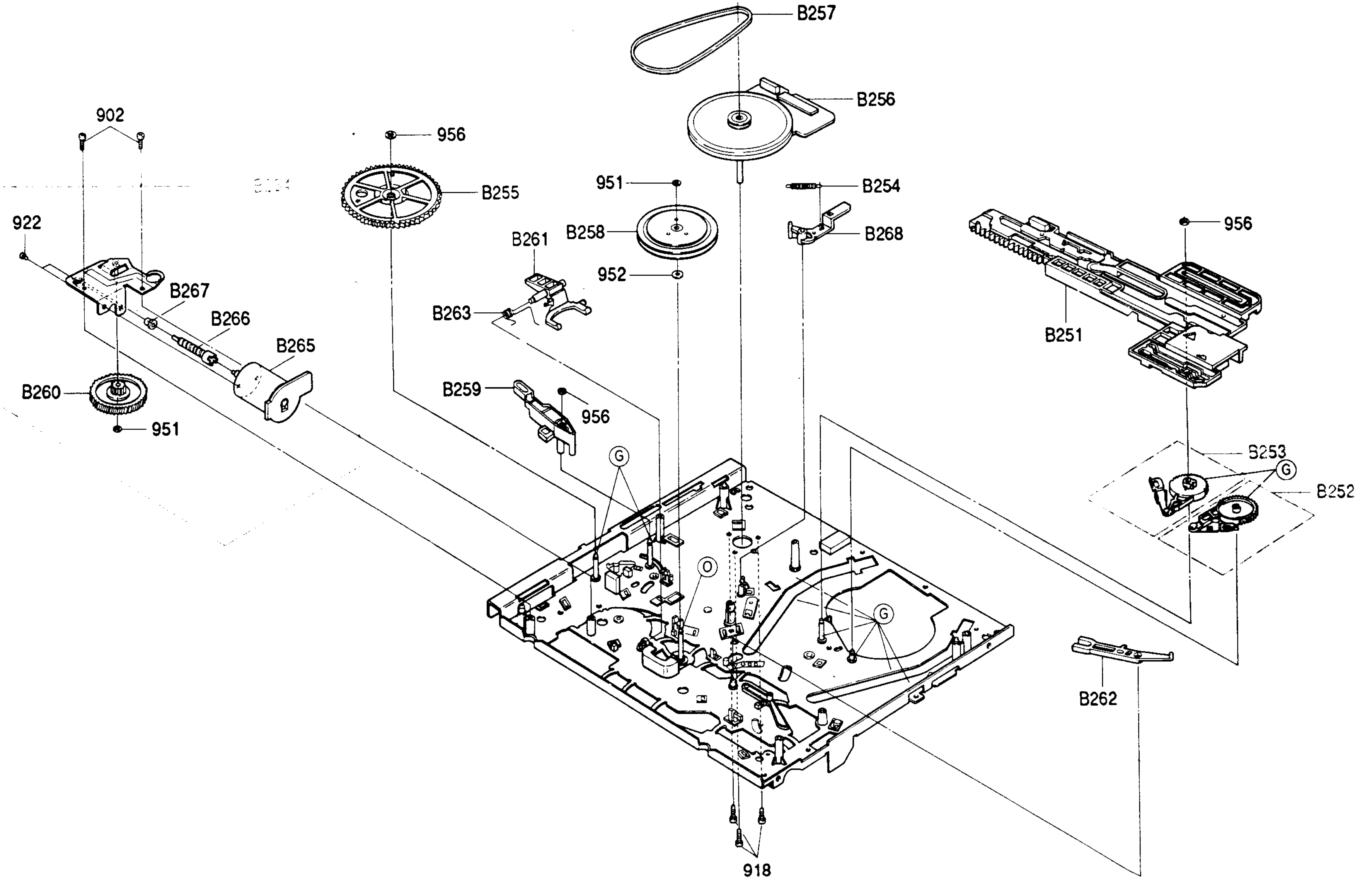
T223

Loca.No	Part No	Description & Specification	Remark
1	V9000-502-205	ASSY PANEL FRONT;SV-30XK/SEG	
	V9000-502-226	ASSY PANEL FRONT;SV-31XK/SEC	
	V9000-502-225	ASSY PANEL FRONT;SV-31XK/SEG	
	V9000-502-217	ASSY PANEL FRONT;SV-40XK/AMF	
	V9000-502-209	ASSY PANEL FRONT;SV-40XK/SEC,SEG,SEP	
2	V4043-0177-00	DOOR-FRONT(L);ABS94HB T2.5 GRY SV-80X	
3	V4043-0176-03	DOOR-FRONT(R);ABS94HB T2.5 GRY (SV-30XK)	
	V4043-0176-01	DOOR-FRONT(R);ABS94HB T2.5 GRY (SV-40XK)	
4	V4083-0454-00	KNOB-SHUTTLE;ABS94HB GRY (SV-40XK ONLY)	
21	V4043-0175-01	DOOR-CASSETTE;ABS94HB T2.5 GRY SV-40XK/SEG	
22	62724-0090-00	SPRING;SUS304 (GE/RCA)	
101	V2002-0027-01	CABINET-TOP;PVC+SECC T0.75 M/GRY(47041) SV-80XK	
108	66009-0079-00	CONNECTOR BOARD(ASSY);HIPS94HB(NON-BR) SV-70X T2	
109	V3312-0149-00	COVER-BOTTOM;SPG T0.5 NTR SV-80X	
153	67158-240-121	SCREW BH;2-4*12 FE FZY	
155	67158-240-163	SCREW-TAP BH;2-4X16 FE FZB	
157	60504-0040-00	SCREW-TAP TITE;BH + TB 3 L12 SWRCH18A ZPC3 YEL	
158	67158-230-120	SCREW-TAP TITE BH;3X10 FE FZY	
200	DX5-R	DECK ASSY;V-1 DECK	
601	69557-302-212	ASSY MAIN;SV-30XK/SEG,SV-31XK/SEG	
	68557-302-213	ASSY MAIN;SV-30XK/AMF,EDI,NSI,SEC,SEI,SEP,SV-31XK/SEC	
	69557-302-216	ASSY MAIN;SV-40XK/SEG	
	69557-302-217	ASSY MAIN;SV-40XK/SEC,SEI,SEP	
	69557-302-218	ASSY MAIN;SV-40XK/AMF,EDI,NSI	
661	A6006-0271	POWER-CORD;CP2 KJP-140# KJ0201 IEC 1.93MT BLK	
	A6006-0272	POWER-CORD;CP2 KKP-419K FTZ 1.932MT (SEG ONLY)	
663	A6010-1364	CONNECTOR-WAFER;35329-4010 WHT MOLEX	
670	69571-302-215	ASSY F/TIMER;SV-30XK/SEG	
	69571-302-216	ASSY F/TIMER;SV-30XK/AMF,EDI,NSI,SEC,SEI,SEP	
	69571-302-225	ASSY F/TIMER;SV-31XK/SEG	
	69571-302-226	ASSY F/TIMER;SV-31XK/SEC	
	69571-302-209	ASSY F/TIMER;SV-40XK/SEG	
	69571-302-210	ASSY F/TIMER;SV-40XK/AMF,EDI,NSI	
	69571-302-211	ASSY F/TIMER;SV-40XK/SEC,SEI,SEP	
LD601A	63323-0313-00	HOLDER-LED;POM	
PT601A	63323-0312-00	HOLDER-PHOTO;POM	
PT602A	63323-0312-00	HOLDER-PHOTO;POM	
S601A	63322-0311-00	HOLDER-TR;POM	
S602A	63322-0311-00	HOLDER-TR;POM	
SC301	62073-0215-01	SHIELD-CASE P/AMP TOP;SPTE T0.3 WHT SV-1400	

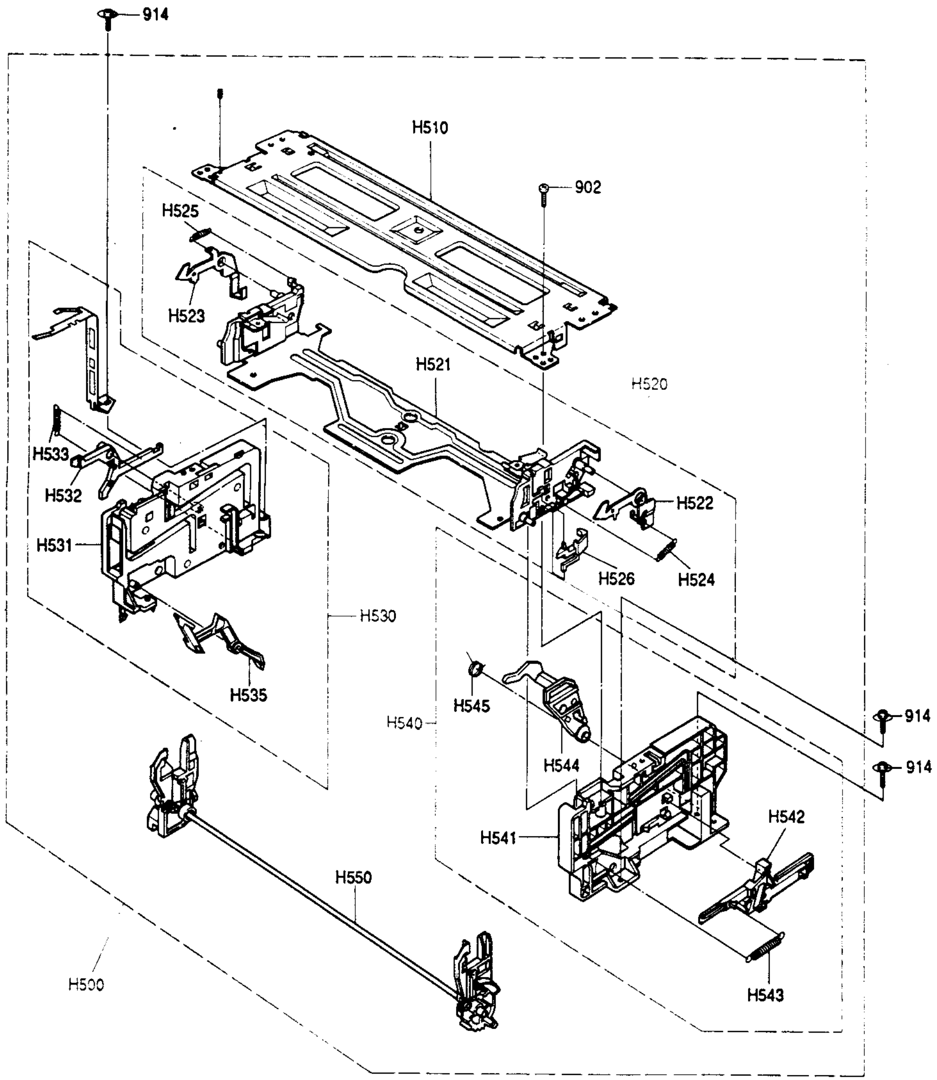
Loca.No	Part No	Description & Specification	Remark
901	60509-0064-00	SCREW-MACHINE;BH FP M3 L8 FE FZY WS	
904	67106-330-061	SCREW-PH;M3X6 TAP TITE	
905	60509-0103-00	SCREW-MACHINE;PH FP M2.6X10 SWRCH10A GLD	
909	60504-0081-00	SCREW-MACHINE;BH + FP 2.6 L9 SWRCH10A YEL	
912	67904-604-710	SCREW-DAMPER;M2.0X7.0 SWCM 10(MFZN2-C)	
919	60504-0102-00	SCREW-MACHINE;BH WLP UP M3X8 SWRCH10A YEL	
920	60504-0104-00	SCREW-TAPPING;BH B M2.6X10 SWRCH18A YEL	
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER	
956	60534-0034-00	WASHER-SLIT;POLY T0.5 OD2.5 ID7	
957	60534-0035-00	WASHER-SLIT;POLY T0.5 OD3.5 ID9	
T201	61574-0023-00	REEL-DISK L ASSY;POM D30 X-5	
T202	61574-0021-00	REEL-DISK R ASSY;POM D X-5	
T203	62613-0013-00	BRAKE-SUB L;PBT X-5	
T204	62614-0011-00	BRAKE-SUB R ASSY;PBT LUPOX EG 5000H X-5	
T207	62614-0009-00	BRAKE-MAIN L ASSY;PBT X-5	
T208	62614-0007-00	BRAKE-MAIN R ASSY;PBT X-5	
T209	62724-0208-00	SPRING-BRAKE MAIN;ES SUS304WPB PT0.35 ID2.8 OD4.2	
T210	61474-0099-00	GEAR-RELAY S ASSY;PEBAX M0.5 M48 SP	
T211	61474-0095-00	GEAR-RELAY(T);PEBAX#6333 M0.5 Z41 SP X-5	
T212	61543-0071-00	ARM-TENSION FULL ASSY;X-5	
T216	62724-0215-00	SPRING-TENSION;ES SUS304WPB PI0.35 ID2.1 L33.25	
T217	61533-0098-00	LEVER-REC S/W;PBT	
T218	62724-0217-00	SPRING-REC S/W;ES SUS304 PI0.23 D3.5 L14.8	
T219	66603-0005-00	MAGNET-F/E HEAD;X-5	
T220	61643-0027-00	SLIDER-G/R ASSY(S);X-5	
T221	61643-0029-00	SLIDER-G/R ASSY(T);X-5	
T222	69000-292-017	ASSY A/C HEAD;DX5-R	(OPTIONAL)
T223	61642-0022-00	SLIDER-RACK HOUSING;POM T10.5 BLK	
T224	66603-0006-00	MAGNET-ACE HEAD ALL(ASSY);X-5	
T225	61642-0024-00	SLIDER-PINCH;POM T2 NAT	
T226	61533-0096-00	LEVER-REVIEW;ZYTEL T3.8 BLK	
T227	61544-0073-00	ARM-REVIEW ASSY;PPS X-5	
T228	61533-0094-00	LEVER-PINCH CAM;PBT6300T T5 X-5	
T229	61532-0093-00	LEVER-PINCH COMP;PBT T13.3 X-5	
T230	62724-0212-00	SPRING-PINCH(COMP);TS SWPB PI1.0 ID6 OD8	
T231	62713-0054-00	PRISM-LED;PMMA D5 IF-850	
T232	61643-0025-00	SLIDER-PUSH;LUPOX 2150 T2 NTR	
T233	62724-0216-00	SPRING-SLIDE PUSH;ES SUS304WPB PI0.55 D3.55 L24.75	
T234	67172-0174-00	UNIT-PINCH ROLLER(ASSY);X-5	
T236	61603-0006-00	IDLER-ASSY;POM X-5	
T237	63383-0031-00	STOPPER-TAPE;POM T2 NAT X-5 DECK	(OPTIONAL)
T300	69020-124-030	CYLINDER ASSY;CX5-D4P	
T301	69000-400-161	CYLINDER SUB ASS'Y;CX5-D4P	
T302	66823-0061-00	MOTOR-CYLINDER;E20XL03	
T303	67084-0076-00	HEAD-BRUSH(ASSY);SECC20/20+CARBON	
T304	62201-0097-00	BASE-CYLINDER;ADC12 X-5	
T309	63344-0002-00	RETAINER-RUBBER(ASSY);SECC+SILICON	

8-3. MECHANICAL PARTS (BOTTOM SIDE)


B257
B256
902
956
951
B254
B255
922
B258
B268
956
B261
952
B267
B263
B251
B266
B265
B259
B260
956
951
B253
G
G
B252
O
G
B262
918

Loca.No	Part No	Description & Specification	Remark
902	60509-0063-00	SCREW-TAPPING;BH B M3 L8 FE FZY	
918	60504-0120-00	SCREW-TAP TITE;BH + B PI2.6 L7 SWRCH18A YEL X-5	
922	67008-130-171	SCREW PH;+M3X3 FE FZY	
951	67334-600-310	WASHER SLIT;[illegible]	
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER	
956	60534-0034-00	WASHER-SLIT;POLY T0.5 OD2.5 ID7	
B251	61641-0023-00	SLIDER-MAIN;PBT2002K T12.4 NAT	
B252	61473-0107-00	GEAR-LOADING L ASSY;X-5	
B253	61473-0105-00	GEAR-LOADING R ASSY;X-5	
B254	62724-0211-00	SPRING-BRAKE CAPSTAN;ES SUS304WPB PI0.4 ID1.7 OD2.	
B255	61472-0104-00	GEAR-MASTER;LUPOXEG5000H M1 Z60 SP NAT	
B256	66823-0059-00	MOTOR-D.D CAPSTAN;F2QTB04	
B257	61494-0009-00	BELT-CAPSTAN;CY-65 FR W2 T2 L88.6	
B258	61453-0003-00	CLUTCH-ASSY	
B259	61533-0095-00	LEVER-SLIDER PINCH;PBT T4 NAT	
B260	61473-0102-00	GEAR-WORMWHEEL;POM M0.55 Z57 SP NAT	
B261	61533-0090-00	LEVER-SHIFT;PBT T2.5	
B262	61533-0091-00	LEVER-IDLER CHANGE;PBT T3.3	
B263	62724-0207-00	SPRING-LEVER SHIFT;TS SUS304WPB PI0.7 ID5.2 OD6.6	
B264	67172-0173-00	UNIT-LOADING(ASSY);X-5	
B265	66823-0060-00	MOTOR-LOADING ASSY;POM+RF370C X-5	
B266	61474-0103-00	GEAR-WORM LOADING;PBT M0.55 WO NAT	
B267	63324-0299-00	HOLDER-SHAFT;POM NAT	
B268	62614-0014-00	BRAKE-CAPSTAN ASSY;POM X-5	

8-4. HOUSING ASSEMBLY



Loca No	Part No	Description & Specification	Remark
902	60509-0063-00	SCREW-TAPPING;BH B M3 L8 FE F ZY	
914	67094-700-710	SCREW-PWH;+ M3X6 FE F ZY	
H500	62052-0014-00	HOUSING-ASSY;X5FL2326A X-5	
H510	62202-0103-00	CHASSIS-UPPER;SECC T1.0 NAT X-5	
H520	63322-0317-00	HOLDER-CASSETTE(ASSY);SECC X5FL0810A X-5	
H521	63321-0314-00	HOLDER-CASSETTE;SECC NAT 1/8H HRB 50	
H522	61533-0102-00	LEVER-LOCK(R);SECC T1.2	
H523	61533-0104-00	LEVER-LOCK(L);SECC T1.2	
H524	62724-0220-00	SPRING-LEVER LOCK;ES SUS304WPB PI0.2 ID2.6 OD3.0	
H525	62724-0220-00	SPRING-LEVER LOCK;ES SUS304WPB PI0.2 ID2.6 OD3.0	
H526	61533-0103-00	LEVER-KEY CASSETTE;POM(LUCEL N109-LD) NAT T2.5	
H530	62203-0105-00	CHASSIS-SIDE(ASSY);ABS X5FL0505A X-5	
H531	62201-0102-00	CHASSIS-SIDE;ABS (HF-380) T10 BLK X-5	
H532	61532-0101-00	LEVER-LIGHT SHUTTER;POM(LUCEL N109-LD) BLK T2.5	
H533	62724-0219-00	SPRING-LIGHT SHUTTER;ES SUS304WPB PI0.2 ID2.6 OD3.	
H535	61533-0100-00	LEVER-DOOR;POM(LUCEL N109P-LD) BLK T5	
H540	62203-0104-00	CHASSIS-SIDE(ASSY);ABS X5FL0505A X-5	
H541	62201-0101-00	CHASSIS-SIDE;ABS (HF-380) T10 BLK X-5	
H542	61642-0032-00	SLIDER-DAMPER;POM(LUCEL N109-LD) T4 BLK	
H543	62724-0218-00	SPRING-SLIDE DAMPER;ES SUS304WPB PI0.4 ID3.8 OD4.6	
H544	61533-0099-00	LEVER-LID OPENER;POM(LUCEL N109-LD) NAT T5	
H545	62724-0222-00	SPRING-LID OPENER;TS SWPB PI0.55 ID8.9 OD10	
H550	61403-0073-00	SHAFT-ARM(ASSY);SUM24L X5FL0405A X-5	

9. ADJUSTMENT

9-1. MECHANICAL ADJUSTMENT

9-1-1. TAPE TRANSPORT SYSTEM

Note :
The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :
- Noise observed on the screen.
- Tape damage.
- Parts replacement in the tape transport system.

1. Location of Tape Transport Adjustment (Adjustment Reference)

Lower flange height of tape guide is used as the basic reference for the transport adjustment.
To maintain the height of the tape guide are prevent damage, do not apply excessive force onto the main base.

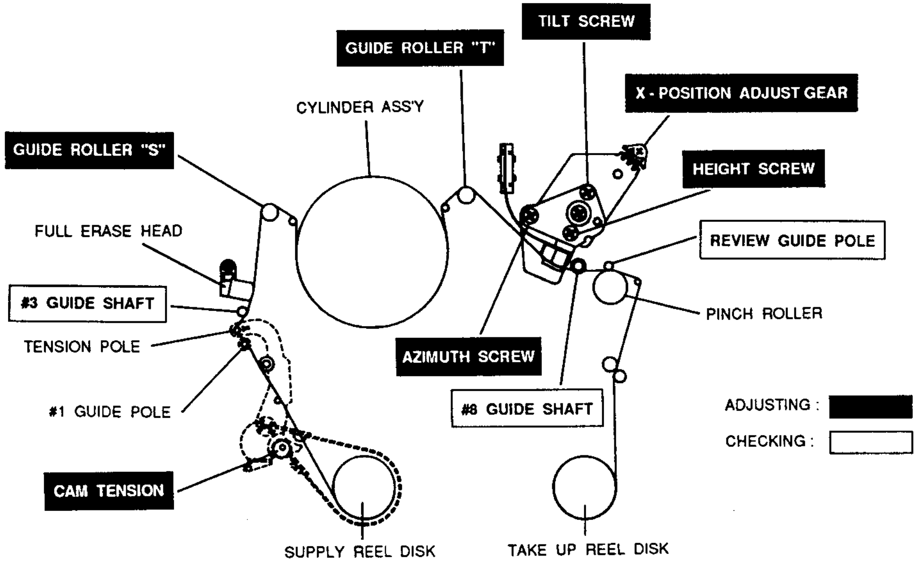

TILT SCREW
GUIDE ROLLER "T"
X - POSITION ADJUST GEAR
CYLINDER ASS'Y
GUIDE ROLLER "S"
HEIGHT SCREW
FULL ERASE HEAD
REVIEW GUIDE POLE
#3 GUIDE SHAFT
PINCH ROLLER
TENSION POLE
AZIMUTH SCREW
#1 GUIDE POLE
#8 GUIDE SHAFT
ADJUSTING : ■
CHECKING : ☐
CAM TENSION
SUPPLY REEL DISK
TAKE UP REEL DISK

Fig. 1 Location of Tape Transport Adjustment

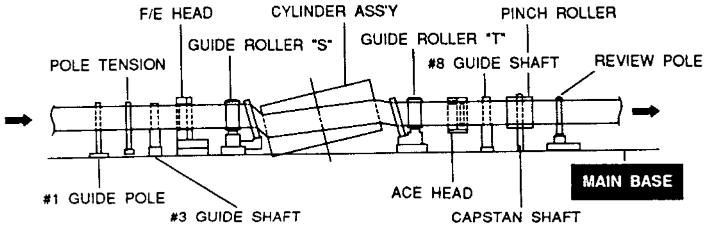

F/E HEAD
CYLINDER ASS'Y
PINCH ROLLER
GUIDE ROLLER "S"
GUIDE ROLLER "T"
POLE TENSION
#8 GUIDE SHAFT
REVIEW POLE
MAIN BASE
#1 GUIDE POLE
ACE HEAD
#3 GUIDE SHAFT
CAPSTAN SHAFT

Fig. 2 Tape Travel Diagram

2. Tape Transport System Adjustment

1) Pre-adjustment

When the part(s) are replaced, perform the required adjustments by referring to procedures for the tape transport system. When the part (s) are replaced, the tape path may be changed. First run a E-180 tape and make sure excessive tape wrinkle does not occur at each tape guide.

1. If tape wrinkle is observed at the S, T-guide rollers, turn the S, T-guide rollers until wrinkle disappears.
2. If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the A/C head.

2) Adjustment Procedure

[1] A/C Head Assembly Adjustment

Test Point : W105 (Envelope)
W106 (H'D SW - Trigger)
W107 (CTL Pulse)
W104 (Audio Out)
Test Tape : PAL Color Bar
Mono Scope
Blank Tape (E-240)

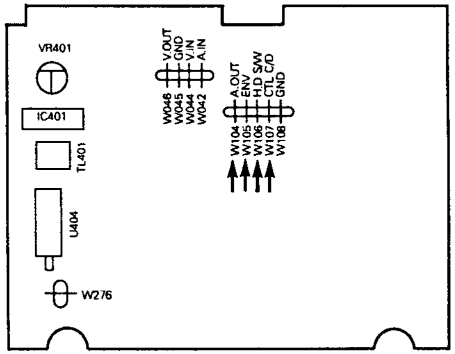

VR401
IC401
TL401
U404
W276
V.OUT
GND
V.IN
A.IN
W046
W045
W044
W042
A.OUT
ENV
H.D S/W
CTL C/D
GND
W104
W105
W106
W107
W108

Fig. 3 Location of Test Point (Main PCB:Top Side)

a. A/C Head Height Adjustment

1. Run the alignment tape (PAL Color Bar) in the playback mode.
2. Observe surface of the audio head using a dental mirror.
3. Turn screw (A), (B), (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25 mm.
(Refer to Fig. 4 and 5)

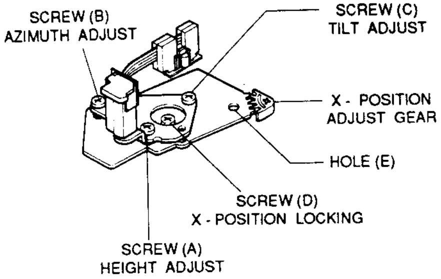

SCREW (B)
AZIMUTH ADJUST
SCREW (C)
TILT ADJUST
X - POSITION
ADJUST GEAR
HOLE (E)
SCREW (D)
X - POSITION LOCKING
SCREW (A)
HEIGHT ADJUST

Fig. 4 Location of A/C Head Adjustment Screw

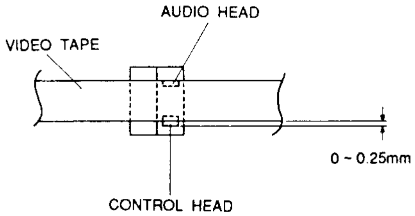

AUDIO HEAD
VIDEO TAPE
0 ~ 0.25mm
CONTROL HEAD

Fig. 5 A/C Head Height Adjustment

b. A/C Head Tilt Adjustment

1. Playback an E-240 tape and observe the position of the tape at the lower flange of tape guide.
2. Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 6 (B).
3. If a curl or wrinkle of the tape has occurred, slightly turn the screw (C) tilt adjust on the A/C H'd ass'y clockwise until it disappears as shown in Fig. 6 (B).
4. Reconfirm the A/C head height.

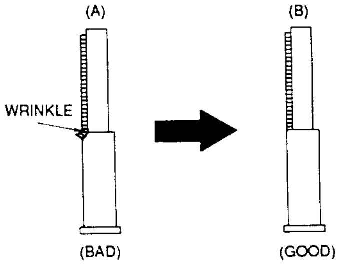

(A)
(B)
WRINKLE
(BAD)
(GOOD)

Fig. 6 Tape Guide Check

c. Audio Azimuth Adjustment

1. Load alignment tape (Mono Scope) and playback the 6KHz signal.
2. Connect channel-1 scope probe to W104 on the Main PCB.
3. Adjust screw (B) to achieve maximum audio level. (See Fig. 4)

d. A/C Head Position (X-Point) Adjustment

(If the remote control (part no. : 69099-633-252) is available)

- Press the "1" button and "INPUT" button simultaneously. This will adjust the tracking center automatically.

(If the remote control (part no. : 69099-633-252) is not abailable)

1. Playback the Mono Scope alignment tape.
2. Connect CH-1 scope probe to W107 and CH-2 scope probe to W106. And then, trigger head switching pulse.
3. Set tracking preset to 14.5msec (2H'd : 0.5mse) using the "FINE" button ▲/▼ of remote control. (Refer to Fig. 7 and 8)
4. Connect CH-1 scope probe to W105 and the CH-2 to "H'D SW" trigger on CH-1.
5. Insert the adjusting driver(+) into X-Position adjusting gear. Adjust the driver in either direction for maximum envelope waveform.

Note : Since the adjusting gear unit may be damaged, do not adjust by force when adjusting the X-point using the adjusting drive(+). After turn the X-point adjusting screw(D) counterclockwise a little, perform the adjustment. After adjustment is completed, tighten the screw.

◆ Setting of Scope ◆

- Volt/div. ; CH-1 = 0.1V
CH-2 = 0.2V

- Time/div. ; 5msec

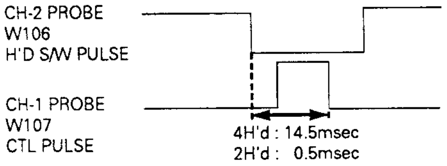

CH-2 PROBE
W106
H'D S/W PULSE
CH-1 PROBE
W107
CTL PULSE
4H'd : 14.5msec
2H'd : 0.5msec

Fig. 7 Tracking Preset Adjustment

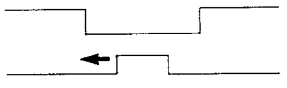
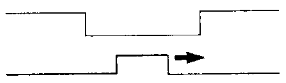
REMOTE BUTTONS	CONTROL PULSE REMOVE
PUSH ▲ FINE ▼	
▲ FINE ▼ PUSH	

Fig. 8 Control Pulse Adjustment

[2] Linearity Adjustment
(S, T-guide Rollers Adjustment)

Test Point : W105 (Envelope)
W106 (H'D SW - Trigger)
Test Tape : Mono Scope

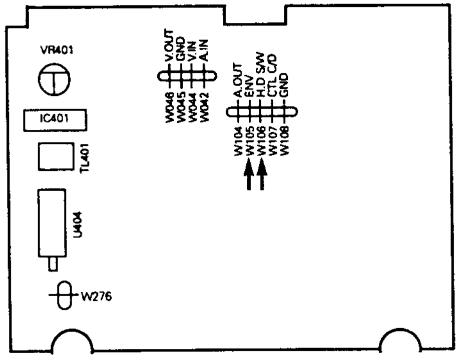
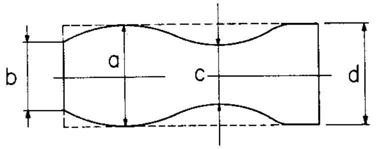

VR401
IC401
TL401
U404
W276
W046 V.OUT
W045 GND
W044 V.IN
W042 A.IN
W104 A.OUT
W105 ENV
W106 H.D S/W
W107 CTL C/D
W108 GND

Fig. 9 Location of Test Point (Main PCB:Top Side)

1. Playback the Mono Scope alignment tape (SP mode).
2. Observe the video envelope signal on an oscilloscope triggered by the video switching pulse.
3. Make sure the video envelope waveform (in its minimum output) meets the specification shown in Fig. 10. If it does not, adjust as follows ;

Note :
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Maximum output of the video RF envelope at the exit side.



a b c d

c, b, d/a ≧ 63%

Fig. 10 Envelope Waveform Adjustment

4. If the section A in Fig. 11 does not meet the specification, adjust the S-guide roller up or down.
5. If the section B in Fig. 11 does not meet the specification, adjust T-guide roller up or down.

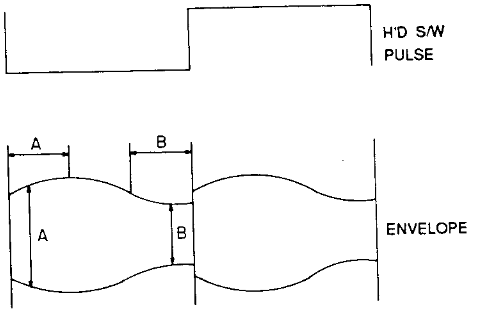

H'D S/W
PULSE
A
B
A
B
ENVELOPE

Fig. 11 Adjustment Points

6. Slightly loosen the set screw at the lower part of the S, T-guide rollers with a Hex Wrench (0.9mm) so that the guide roller can be adjusted with reasonable tightness (Refer to Fig. 12).

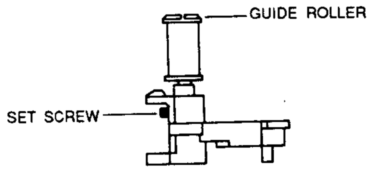

GUIDE ROLLER
SET SCREW

Fig. 12

7. Play back the Mono Scope alignment tape (SP mode).
8. Connect an oscilloscope CH-1 to the W105 and CH-2 to the W106 on the same PCB for triggering.
9. Turn the guide roller heads with a flat head (▬) screw driver to obtain a flat video RF envelope as shown in Fig. 13.
10. After the adjustment is completed, tighten the set screws.

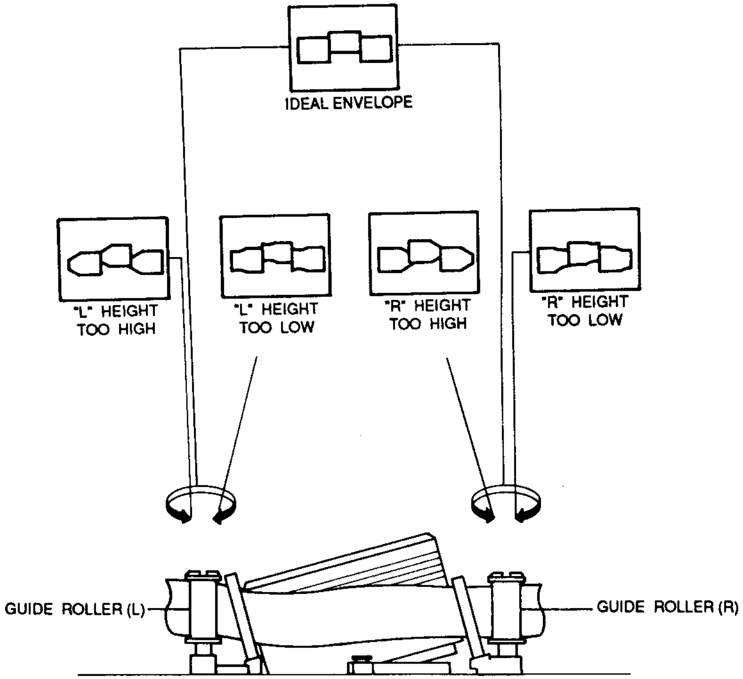

IDEAL ENVELOPE
"L" HEIGHT TOO HIGH
"L" HEIGHT TOO LOW
"R" HEIGHT TOO HIGH
"R" HEIGHT TOO LOW
GUIDE ROLLER (L)
GUIDE ROLLER (R)

Fig. 13 S, T-Guide Roller Height Adjustments

[3] Check for transitional operation from RPS to play

Check transition from RPS mode to play mode, using a pre-recorded SP tape, make sure the entrance side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 14).

If the envelope waveform does not reach specified peak-to-peak amplitude within 3 seconds, adjust as follows :

1. Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2. Change operation mode from the RPS to the play mode again and make sure entrance side of envelope rises within 3 seconds.

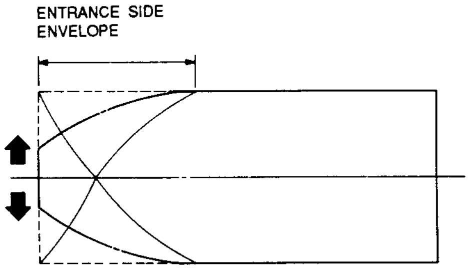


Fig. 14 Video envelope rising when operation mode changes from RPS to play mode.

[4] Envelope check

1. Make recordings on E-120 and E-180 tapes, and make sure the playback output envelope meets the specification as shown in Fig. 15.
2. Play back a self recorded tape (recording made on this unit), (with a E-120) the video envelope should meet the specification as shown in Fig. 15.
   In SP mode, (A) should be same as (B).
   If the head gap is wide, upper cylinder should be checked.

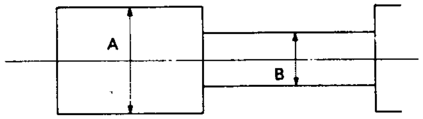


Fig. 15 Envelope Output and Output Level Difference

[5] Tape wrinkle check

1. Run the E-240 tape in the playback, FPS, RPS and the pause mode and then observe tape wrinkle at each guide.
2. If excessive tape wrinkle is observed in the mode shown above, perform the following adjustments playback mode:

- Tape wrinkle at the S, T-guide roller section : Linearity adjustment.
- Tape wrinkle at tape guide flange : A/C head assembly coarse adjustment.

9-1-2. REEL TORQUE

1. Reel Torque

1. The rotation of the capstan motor drives the clutch ass'y through the belt capstan motor.
2. Brake operation and shift operation in FF/REW are done by a slide lever.
3. Transportation of accurate driving force is done by gears (clutch ass'y).

MODE	TORQUE g/cm	GAUGE
PB/REC	100 ± 30	Cassette Torquemeter
RPS	170 ± 30	Cassette Torquemeter
FF/REW	Minimum 600	Torque Gauge

Note : If the spec does not neet the specification in above chart, replace the clutch ass'y and then recheck.

2. Location of Tension Pole and Back Tension Adjustment

1. Remove the housing ass'y and set the deck to "PLAY" mode.
2. Adjust the cam tension to 0 ~ −0.5mm from the center of supply roller.
3. The back tension meter should be used to check back tension. It should be 40 ~ 47g.cm.

Counterclockwise : Torque UP
Clockwise : Torque DOWN

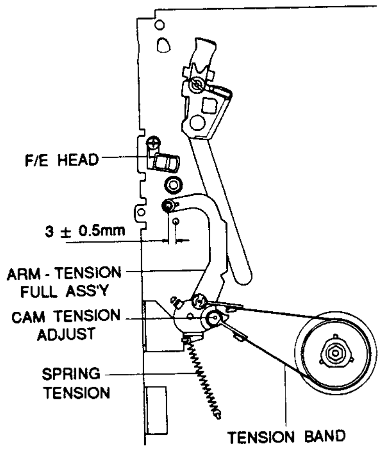


Fig. 16 Tension Pole and Back Tension Adjustment

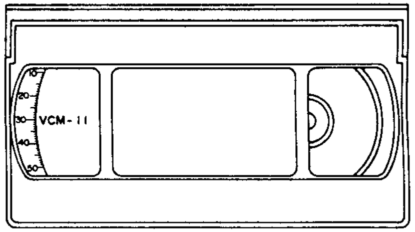


Fig. 17 Back Tension Tape Torque Cassette

9-2. ELECTRICAL ADJUSTMENTS

9-2-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustment only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

[1] Required Test Equipment

1. Color Television or Monitor.
2. Oscilloscope : Wide-band, dual-trace,
   triggered delayed sweep.
3. DC Voltmeter.
4. TV CH Generator.
5. Attenuator.
6. Recording tape (Blank tape).
7. Pattern Generator : PAL color bar. 100% White.

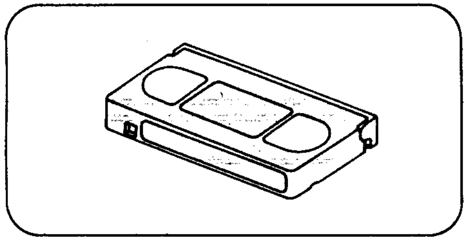


Fig. 1 Alignment Tape

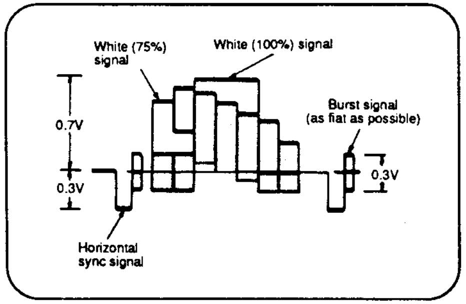
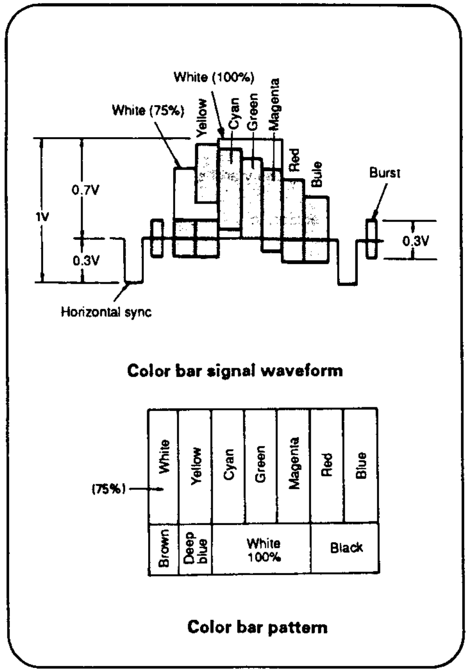

White (75%) signal
White (100%) signal
0.7V
Burst signal (as flat as possible)
0.3V
0.3V
Horizontal sync signal

Fig. 2 Color bar signal of pattern generator

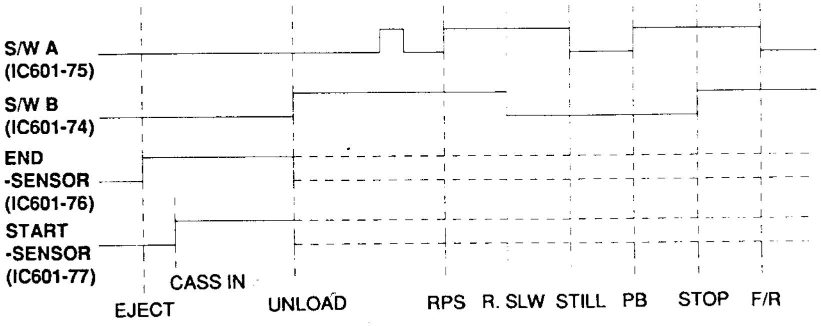

White (100%)
White (75%)
Yellow
Cyan
Green
Magenta
Red
Bule
Burst
0.7V
1V
0.3V
0.3V
Horizontal sync
White
Yellow
Cyan
Green
Magenta
Red
Blue
(75%)
Brown
Deep blue
White 100%
Black

Color bar signal waveform

Color bar pattern

Fig. 3 Color bar signal of alignment tape (75% Color Bars)

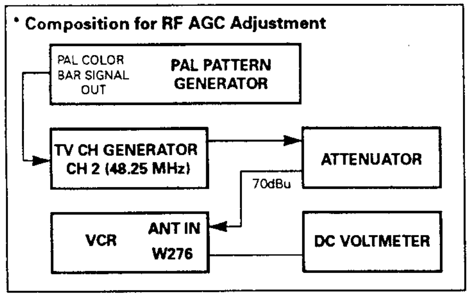
9-2-2. TIMING CHART OF PROGRAM S/W


S/W A (IC601-75)
S/W B (IC601-74)
END -SENSOR (IC601-76)
START -SENSOR (IC601-77)
EJECT
CASS IN
UNLOAD
RPS
R. SLW
STILL
PB
STOP
F/R

POSITION	PROGRAM S/W (SW601)				ACTION MODE
	E/S	S/S	S/W A	S/W B	
EJECT	L	L	L	L	EJECT
CASS IN	H	L H	L	L	CASS IN
UNLOAD	-	-	L	L H	UNLOAD
R. PS	-	-	L H	H	R. PS, Z-R. PS
R. SLOW	-	-	H	H L	PINCH ROLLER OFF POSITION
STILL	-	-	H L	L	STILL, SLOW, F-ADV
PLAY	-	-	L H	L	PB, T-STOP, REC, PAUSE, F. PS, Z-FPS
STOP	-	-	H	L H	STOP, POWER OFF
FF/REW	-	-	H L	H	FF, REW

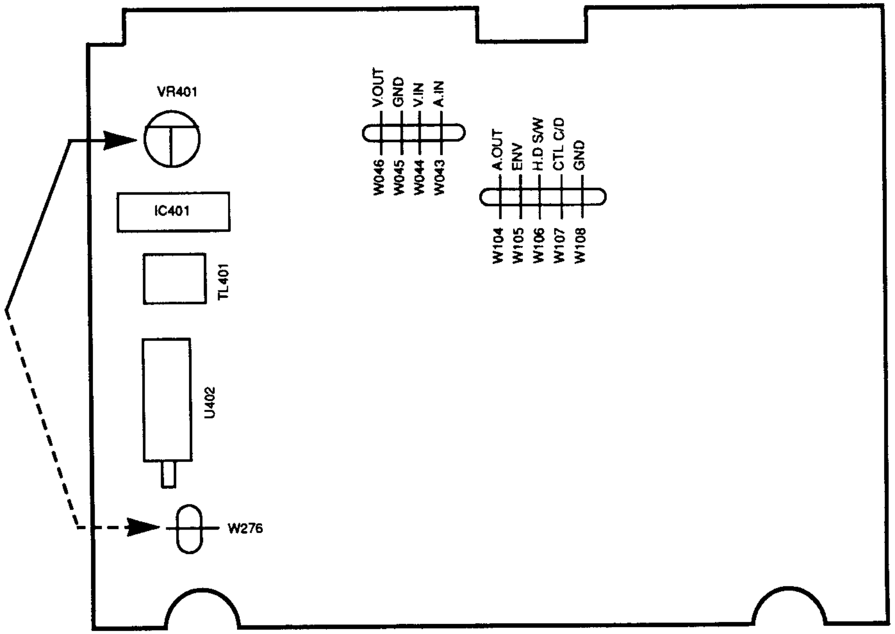
9-2-3. SERVO & VIDEO SECTION

STEP	ADJUSTMENT ITEM
1. MODE and INPUT SIGNAL/ALIGNMENT TAPE 2. TEST POINT and ADJ. part 3. RESULT & REMARKS	ADJ. part Test Point


• Composition for RF AGC Adjustment
PAL COLOR BAR SIGNAL OUT
PAL PATTERN GENERATOR
TV CH GENERATOR CH 2 (48.25 MHz)
ATTENUATOR
70dBu
VCR
ANT IN W276
DC VOLTMETER

2 RF AGC

1. "E-E" (stop mode), RF signal.
2. W276 & VR401.
3. • Apply PAL color bar signal to the video input terminal of the TV channel generator and set channel selector to CH 2 (48.25 MHz).
   - • Adjust the point signal level so that the output of attenuator is 70dBu.
   - • Apply the output of attenuator to the ANT IN terminal of VCR.
   - • Set the channel of VCR to CH 2.
   - • Connect DC voltmeter to W276.
   - • Adjust VR401 for DC 4.2 ± 0.1V.


VR401
IC401
TL401
U402
W276
VOUT
GND
V.IN
A.IN
W046
W045
W044
W043
A.OUT
ENV
H.D S/W
CTL C/D
GND
W104
W105
W106
W107
W108

MAIN PCB

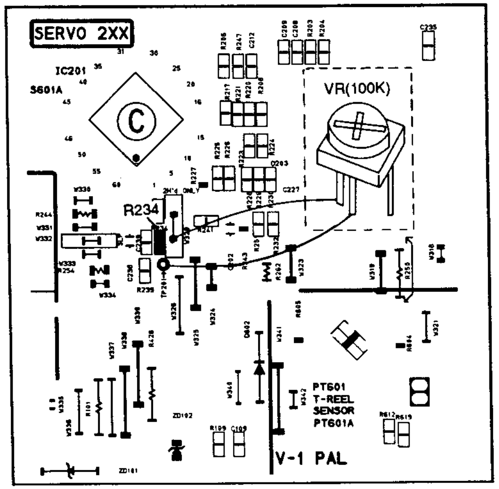

SERVO 2XX
IC201
S601A
VR(100K)
R234
PT601
T-REEL
SENSOR
PT601A
V-1 PAL

Fig. 2

1 HEAD SWITCHING POINT

(If the remote control (part no. : 69099-633-252) is available)

- ● Press the "3" button and the "INPUT" button simultaneously. This will automatically position the H'd S/W at 6.5H ± 0.5H.

(If the remote control is not avilable)

1. Remove the R234(chip) (See Fig. 2).
2. Install VR(100K) to the solder land of W329 & TP201 (See Fig. 2).
3. Play back the lion pattern tape (7KHz).
4. Connect CH1 of oscilloscope to W106 (H'd s/w) and CH2 to W046(video out).
5. Adjust VR(100K) so that the switching point is positioned at 6.5H ± 0.5H (See Fig. 1).
6. When the adjustment is complete, remove the VR(100K) and measure its value using a multimeter. Install a fixed resistor which has the measured value and install it in place of R234.

NOTE :
1) If a chip resistor is not available, install on axial resistor in place of W329 & TP201 (See Fig. 2). At this time R234 chip resistor should be removed.
2) If measured value is 1.7K installing a 1.5K or 2K replacement is OK.

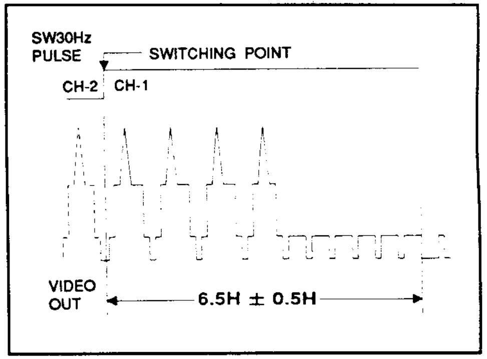


Fig. 1 Head switching point

10. P.C.BOARDS

Page

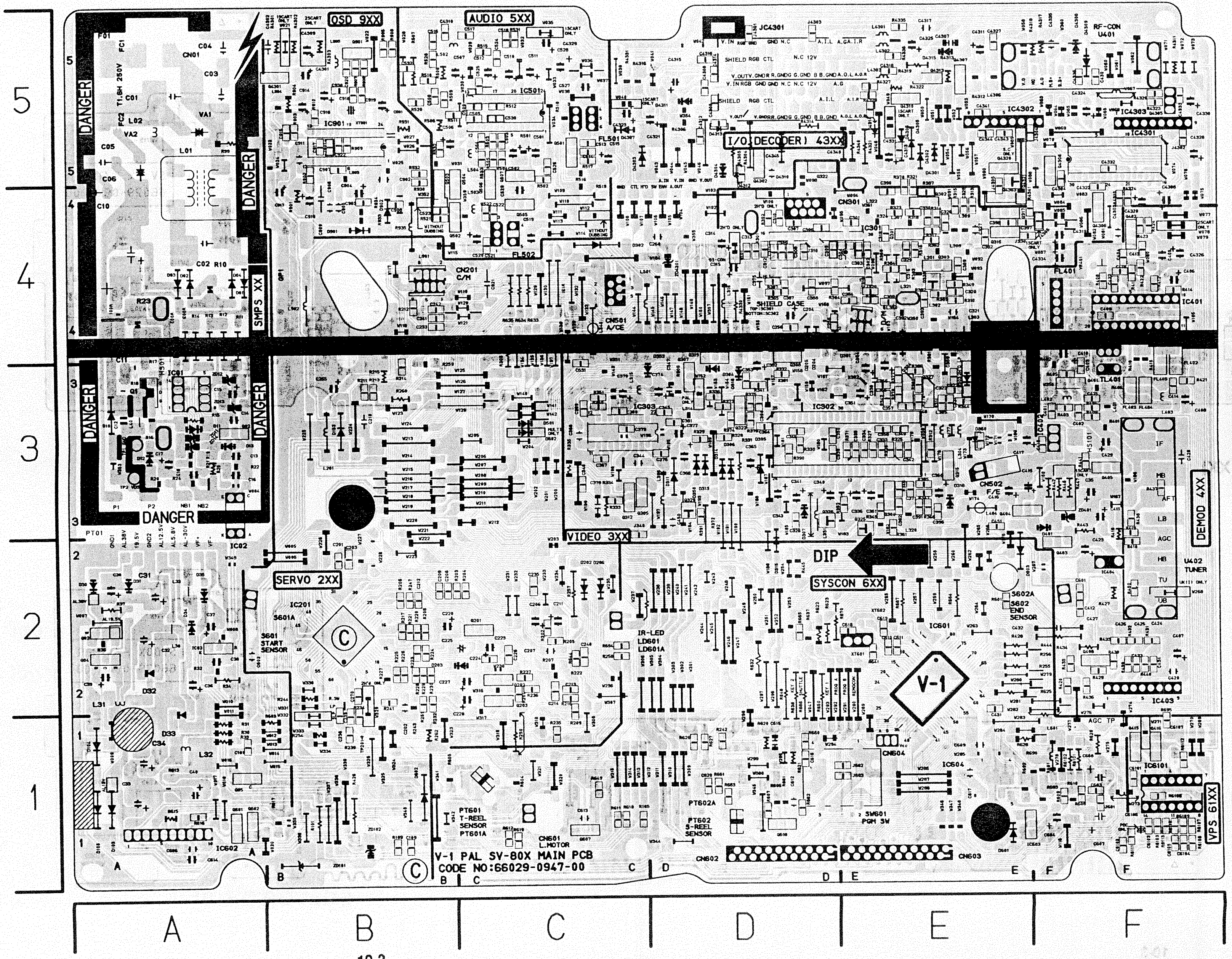
10-1. MAIN -------------------------------- 10-2

10-2. FUNCTION-TIMER (SV-30XK\SV-31XK) ------ 10-3

10-3. FUNCTION-TIMER (SV-40XK) -------------- 10-3

10-1. MAIN

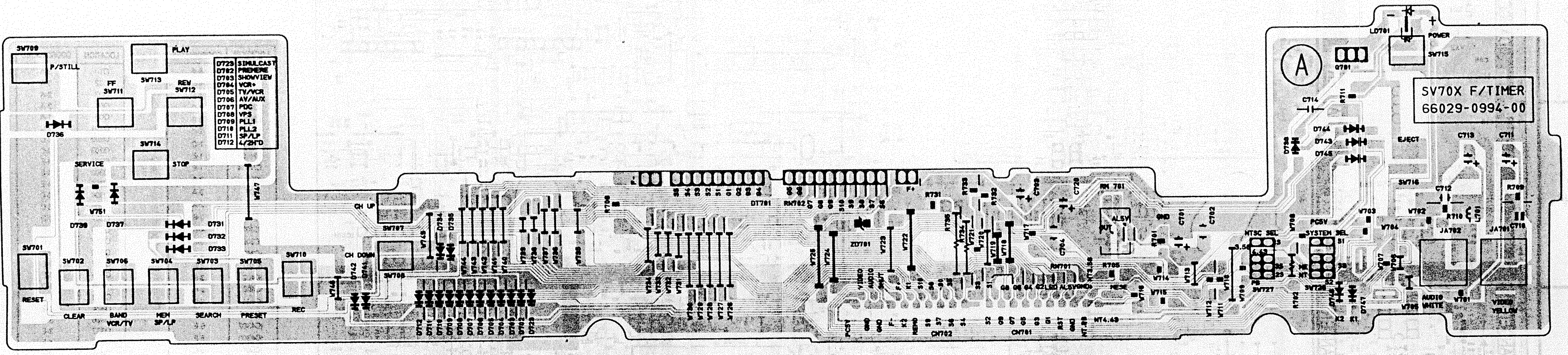
☐ CHIP PARTS


DANGER
OSD 9XX
AUDIO 5XX
I/O (DECODER) 43XX
SMPS XX
VIDEO 3XX
SERVO 2XX
SYSCON 6XX
DEMOD 4XX
VPS 61XX
DIP
V-1
C
RF-CON U401
U402 TUNER
JC4301
IC4301
IC4302
IC4303
IC501
IC901
IC301
IC302
IC303
IC401
IC403
IC201
IC601
IC602
IC604
IC6101
IC01
IC02
CN01
CN201 C/H
CN301
CN501 A/CE
CN502 F/E
CN601 L.MOTOR
CN602
CN603
CN604
FL401
FL501
FL502
TL401
PT01
S601 START SENSOR
S601A
S602 END SENSOR
S602A
IR-LED LD601 LD601A
PT601 T-REEL SENSOR
PT601A
PT602 S-REEL SENSOR
PT602A
SW601 PGM SW
SHIELD CASE
V-1 PAL SV-80X MAIN PCB
CODE NO:66029-0947-00
5
4
3
2
1
A
B
C
D
E
F

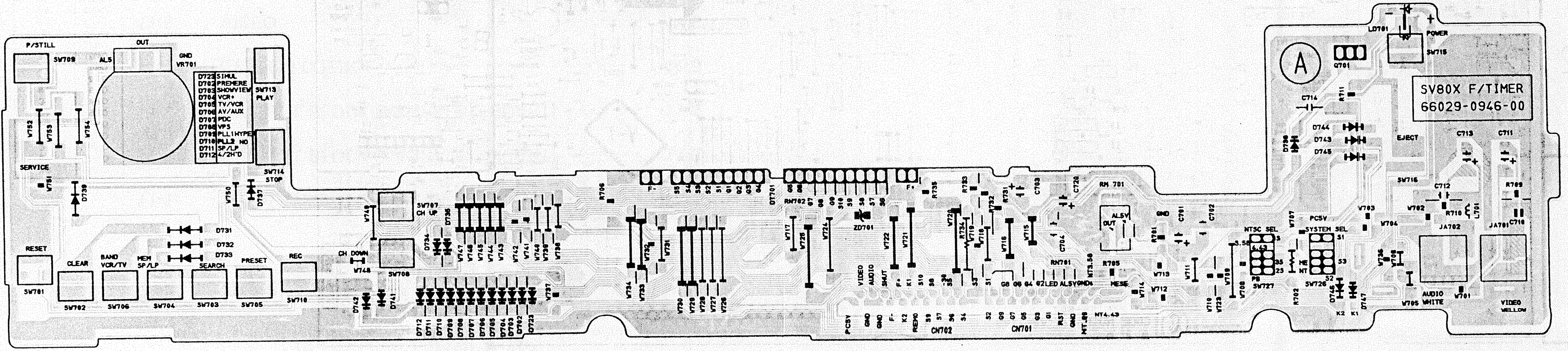
LOCATION	COORDINATES
CN01	5-A
CN201	4-C
CN301	4-E
CN501	4-C
CN502	3-E
CN601	1-C
CN602	1-D
CN603	1-E
CN604	1-E
IC01	3-A
IC02	3-A
IC03	2-A
IC201	2-B
IC301	4-D
IC302	3-E
IC303	3-C
IC401	4-F
IC402	3-F
IC403	2-F
IC404	2-F
IC4301	5-F
IC4302	5-E
IC4303	5-F
IC501	5-C
IC601	2-E
IC602	1-A
IC603	1-E
IC604	1-E
IC6101	1-F
IC901	5-B
PT601	1-C
PT602	1-C
S601	2-B
S602	2-E
VR401	4-F

LOCATION	COORDINATES
Q1	3-A
Q02	3-A
Q03	2-A
Q04	2-A
Q05	1-A
Q201	2-C
Q202	2-C
Q203	2-C
Q301	4-E
Q302	4-E
Q303	4-E
Q304	3-E
Q305	3-C
Q307	3-D
Q308	3-D
Q312	3-C
Q316	4-E
Q317	4-E
Q315	3-E
Q319	3-D
Q323	3-D
Q324	3-E
Q326	3-D
Q327	3-E
Q328	4-E
Q401	3-F
Q402	4-F
Q403	2-F
Q404	3-E
Q405	3-F
Q408	2-F
Q415	1-F
Q416	1-F
Q4301	5-B
Q4302	4-D
Q4303	4-E
Q4305	5-F
Q4306	4-F
Q4307	5-E
Q4308	4-F
Q4310	5-E
Q4313	5-E
Q4320	4-E
Q4321	4-E
Q501	5-C
Q502	4-C
Q503	4-B
Q504	4-C
Q505	4-C
Q601	1-A
Q602	1-A
Q607	1-C
Q608	1-D
Q901	5-B

10-2. FUNCTION-TIMER (SV-30XK\SV-31XK)


SW709
P/STILL
PLAY
SW713
FF
SW711
REW
SW712
D723 SIMULCAST
D702 PREMERE
D703 SHOWVIEW
D704 VCR+
D705 TV/VCR
D706 AV/AUX
D707 PDC
D708 VPS
D709 PLL1
D710 PLL2
D711 SP/LP
D712 4/2H'D
D736
SW714
SERVICE
STOP
W751
W747
D739
D737
D731
D732
D733
SW701
SW702
SW706
SW704
SW703
SW705
SW710
RESET
CLEAR
BAND
VCR/TV
MEM
SP/LP
SEARCH
PRESET
REC
CH UP
CH DOWN
SW707
SW708
DT701
RM702
ZD701
CN702
CN701
RM 701
ALSV
OUT
GND
PCSV
NTSC SEL
SYSTEM SEL
SW727
SW726
LD701
POWER
SW715
A
Q701
SV70X F/TIMER
66029-0994-00
C714
R711
D744
D743
D745
D738
EJECT
C713
C711
SW716
C712
R709
R710
L701
W703
W702
W704
JA702
JA701
C710
AUDIO
WHITE
VIDEO
YELLOW
W705
W701
K2
K1

10-3. FUNCTION-TIMER (SV-40XK)


P/STILL
SW709
OUT
AL5
GND
VR701
D723 SIMUL
D702 PREMERE
D703 SHOWVIEW
D704 VCR+
D705 TV/VCR
D706 AV/AUX
D707 PDC
D708 VPS
D709 PLL1 HYPER
D710 PLL2 NO
D711 SP/LP
D712 4/2H'D
SW713
PLAY
SW714
STOP
W752
W753
W754
SERVICE
W751
D739
W750
D737
D731
D732
D733
RESET
CLEAR
BAND
VCR/TV
MEM
SP/LP
SEARCH
PRESET
REC
SW701
SW702
SW706
SW704
SW703
SW705
SW710
SW707
CH UP
CH DOWN
SW708
DT701
RM702
ZD701
CN702
CN701
RM 701
ALSV
OUT
GND
PCSV
NTSC SEL
SYSTEM SEL
SW727
SW726
LD701
POWER
SW715
A
Q701
SV80X F/TIMER
66029-0946-00
C714
R711
D744
D743
D745
D738
EJECT
C713
C711
SW716
C712
R709
R710
L701
W703
W702
W704
JA702
JA701
C710
AUDIO
WHITE
VIDEO
YELLOW
W705
W701
K2
K1

11. BLOCK DIAGRAMS

Page

11-1. TOTAL WIRING DIAGRAM ------------------ 11-2

11-2. OVERALL BLOCK DIAGRAM (1 SCART) ------- 11-3

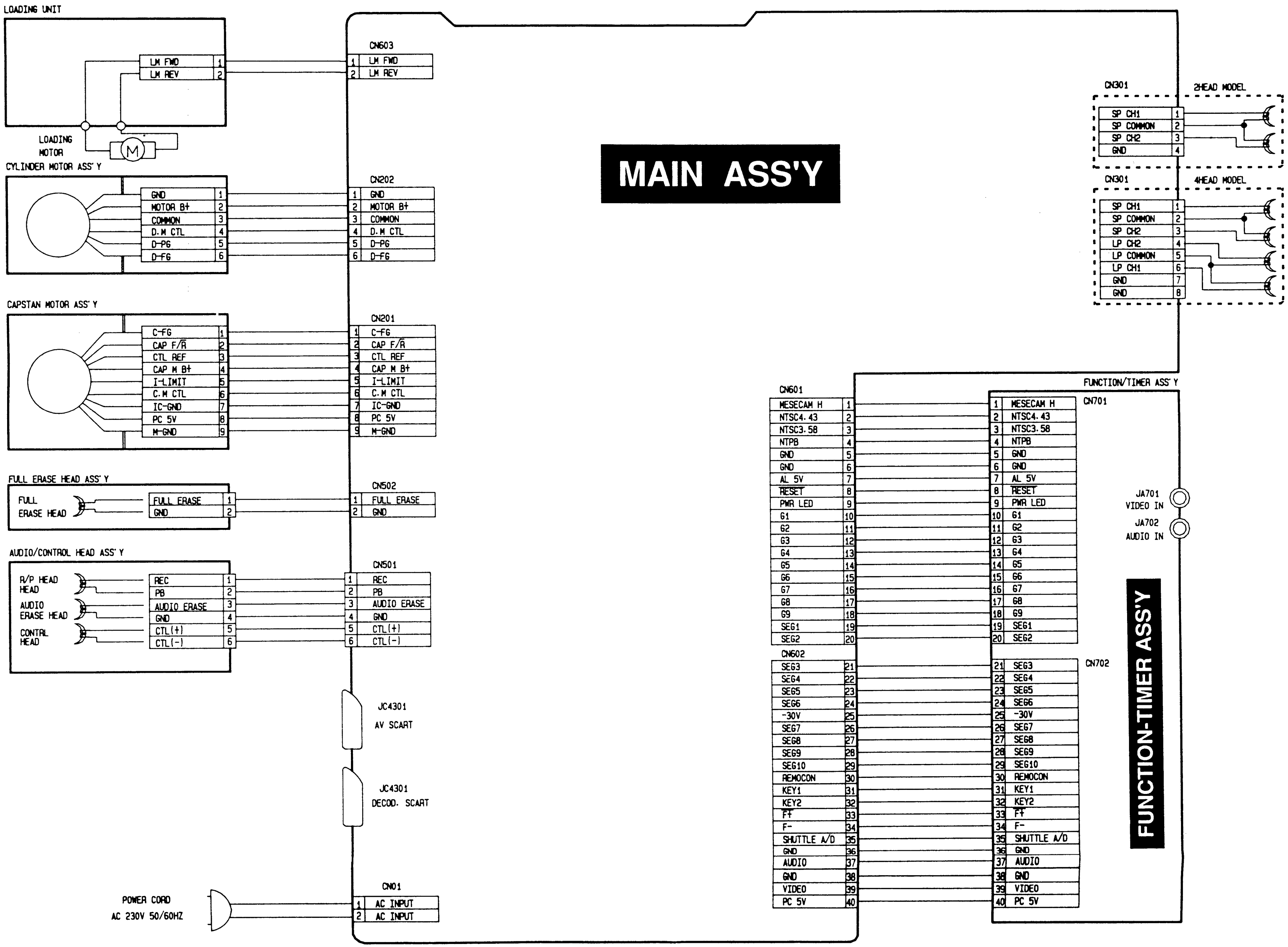
11-3. OVERALL BLOCK DIAGRAM (2 SCART) ------- 11-4

11-4. SYSTEM COTROL ----------------------- 11-5

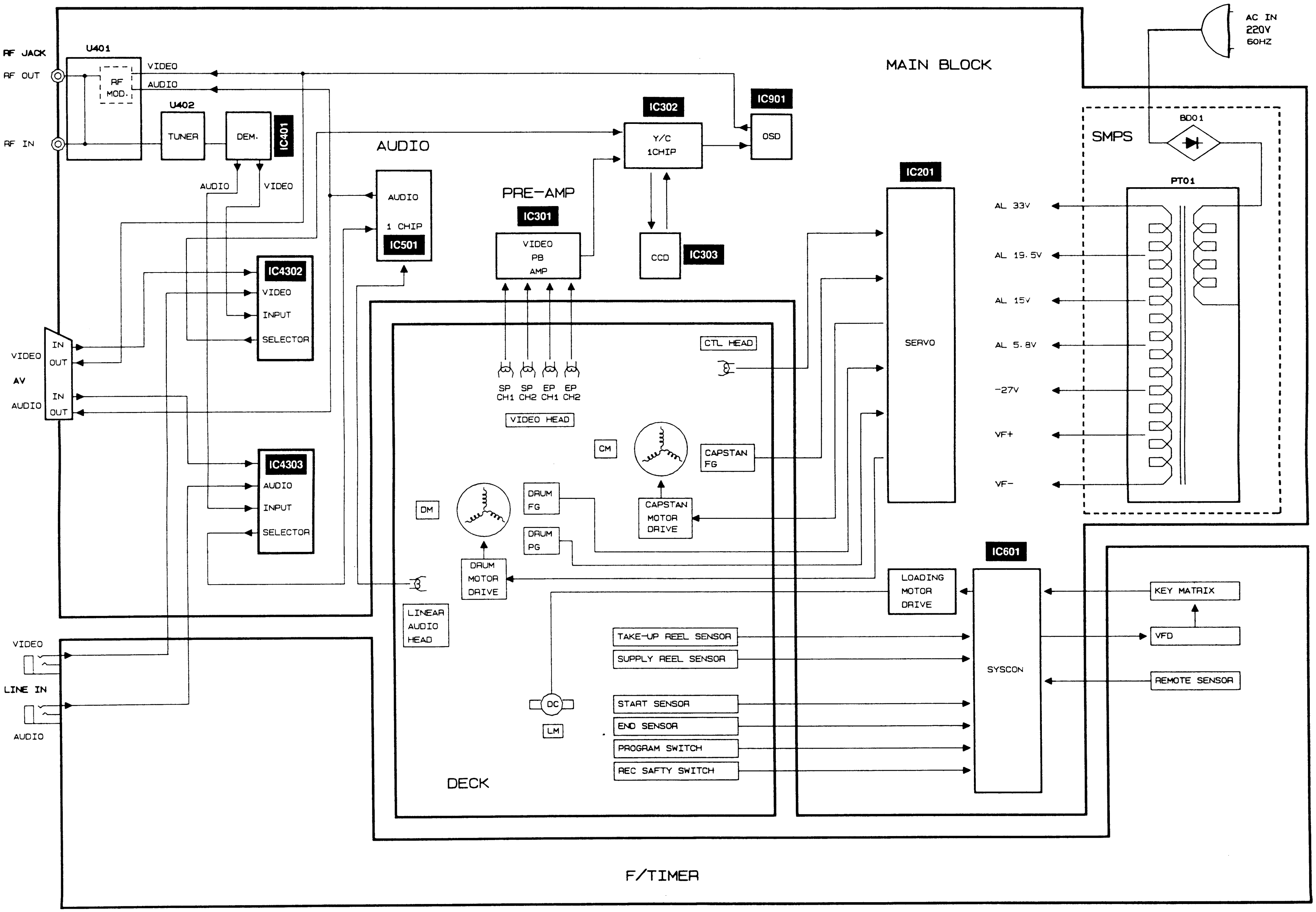
11-5 VIDEO ------------------------------ 11-6

11-6. O.S.D ------------------------------ 11-7

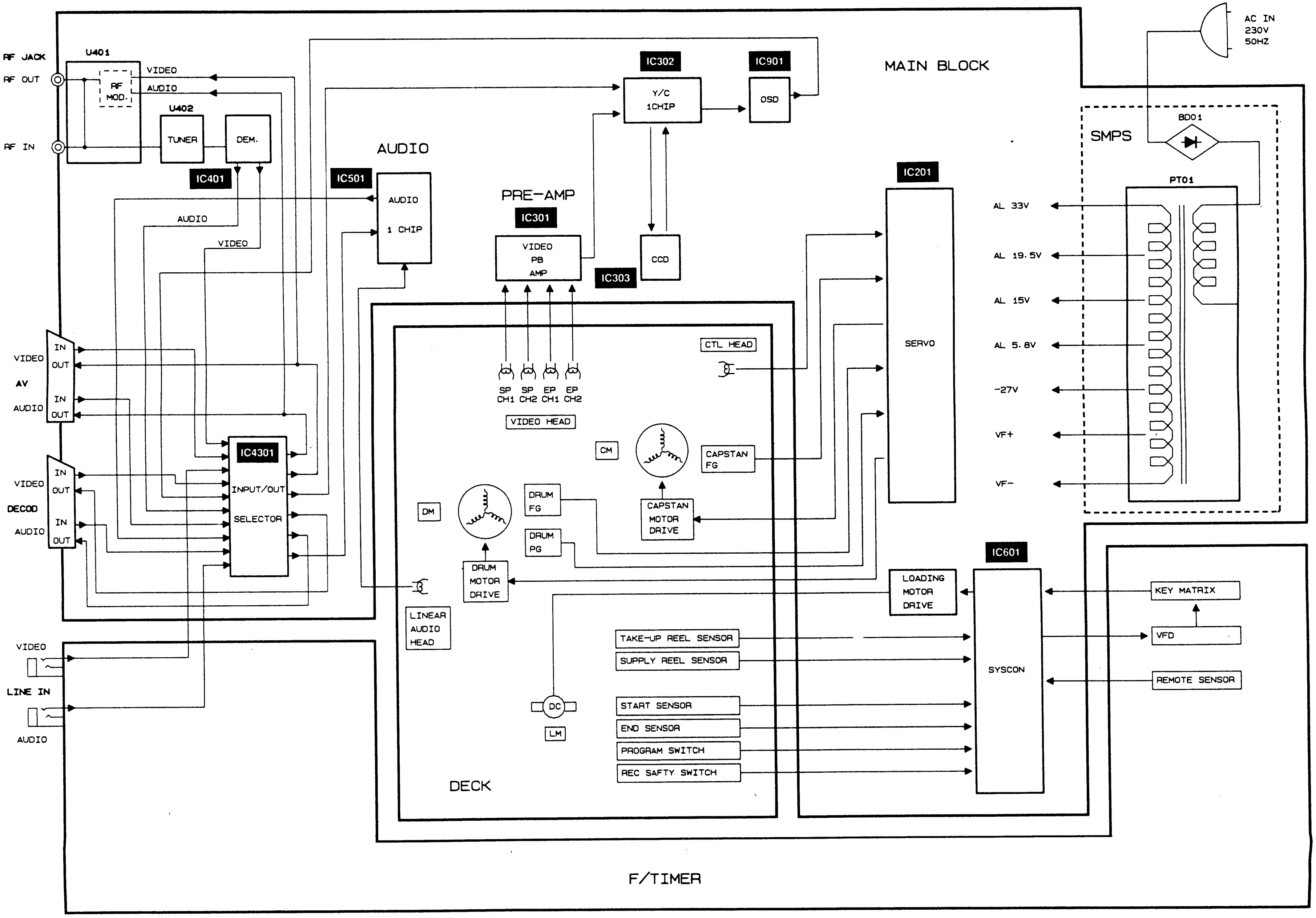
11-1. TOTAL WIRING DIAGRAM


LOADING UNIT
LM FWD 1
LM REV 2
LOADING MOTOR
M
CYLINDER MOTOR ASS'Y
GND 1
MOTOR B+ 2
COMMON 3
D.M CTL 4
D-PG 5
D-FG 6
CAPSTAN MOTOR ASS'Y
C-FG 1
CAP F/R 2
CTL REF 3
CAP M B+ 4
I-LIMIT 5
C.M CTL 6
IC-GND 7
PC 5V 8
M-GND 9
FULL ERASE HEAD ASS'Y
FULL ERASE HEAD
FULL ERASE 1
GND 2
AUDIO/CONTROL HEAD ASS'Y
R/P HEAD HEAD
AUDIO ERASE HEAD
CONTRL HEAD
REC 1
PB 2
AUDIO ERASE 3
GND 4
CTL(+) 5
CTL(-) 6
POWER CORD
AC 230V 50/60HZ
MAIN ASS'Y
CN603
1 LM FWD
2 LM REV
CN202
1 GND
2 MOTOR B+
3 COMMON
4 D.M CTL
5 D-PG
6 D-FG
CN201
1 C-FG
2 CAP F/R
3 CTL REF
4 CAP M B+
5 I-LIMIT
6 C.M CTL
7 IC-GND
8 PC 5V
9 M-GND
CN502
1 FULL ERASE
2 GND
CN501
1 REC
2 PB
3 AUDIO ERASE
4 GND
5 CTL(+)
6 CTL(-)
JC4301 AV SCART
JC4301 DECOD. SCART
CN01
1 AC INPUT
2 AC INPUT
CN301
2HEAD MODEL
SP CH1 1
SP COMMON 2
SP CH2 3
GND 4
CN301
4HEAD MODEL
SP CH1 1
SP COMMON 2
SP CH2 3
LP CH2 4
LP COMMON 5
LP CH1 6
GND 7
GND 8
CN601
MESECAM H 1
NTSC4.43 2
NTSC3.58 3
NTPB 4
GND 5
GND 6
AL 5V 7
RESET 8
PWR LED 9
G1 10
G2 11
G3 12
G4 13
G5 14
G6 15
G7 16
G8 17
G9 18
SEG1 19
SEG2 20
CN602
SEG3 21
SEG4 22
SEG5 23
SEG6 24
-30V 25
SEG7 26
SEG8 27
SEG9 28
SEG10 29
REMOCON 30
KEY1 31
KEY2 32
F+ 33
F- 34
SHUTTLE A/D 35
GND 36
AUDIO 37
GND 38
VIDEO 39
PC 5V 40
FUNCTION/TIMER ASS'Y
CN701
1 MESECAM H
2 NTSC4.43
3 NTSC3.58
4 NTPB
5 GND
6 GND
7 AL 5V
8 RESET
9 PWR LED
10 G1
11 G2
12 G3
13 G4
14 G5
15 G6
16 G7
17 G8
18 G9
19 SEG1
20 SEG2
CN702
21 SEG3
22 SEG4
23 SEG5
24 SEG6
25 -30V
26 SEG7
27 SEG8
28 SEG9
29 SEG10
30 REMOCON
31 KEY1
32 KEY2
33 F+
34 F-
35 SHUTTLE A/D
36 GND
37 AUDIO
38 GND
39 VIDEO
40 PC 5V
JA701 VIDEO IN
JA702 AUDIO IN
FUNCTION-TIMER ASS'Y

11-2. OVERALL BLOCK DIAGRAM (1 SCART)

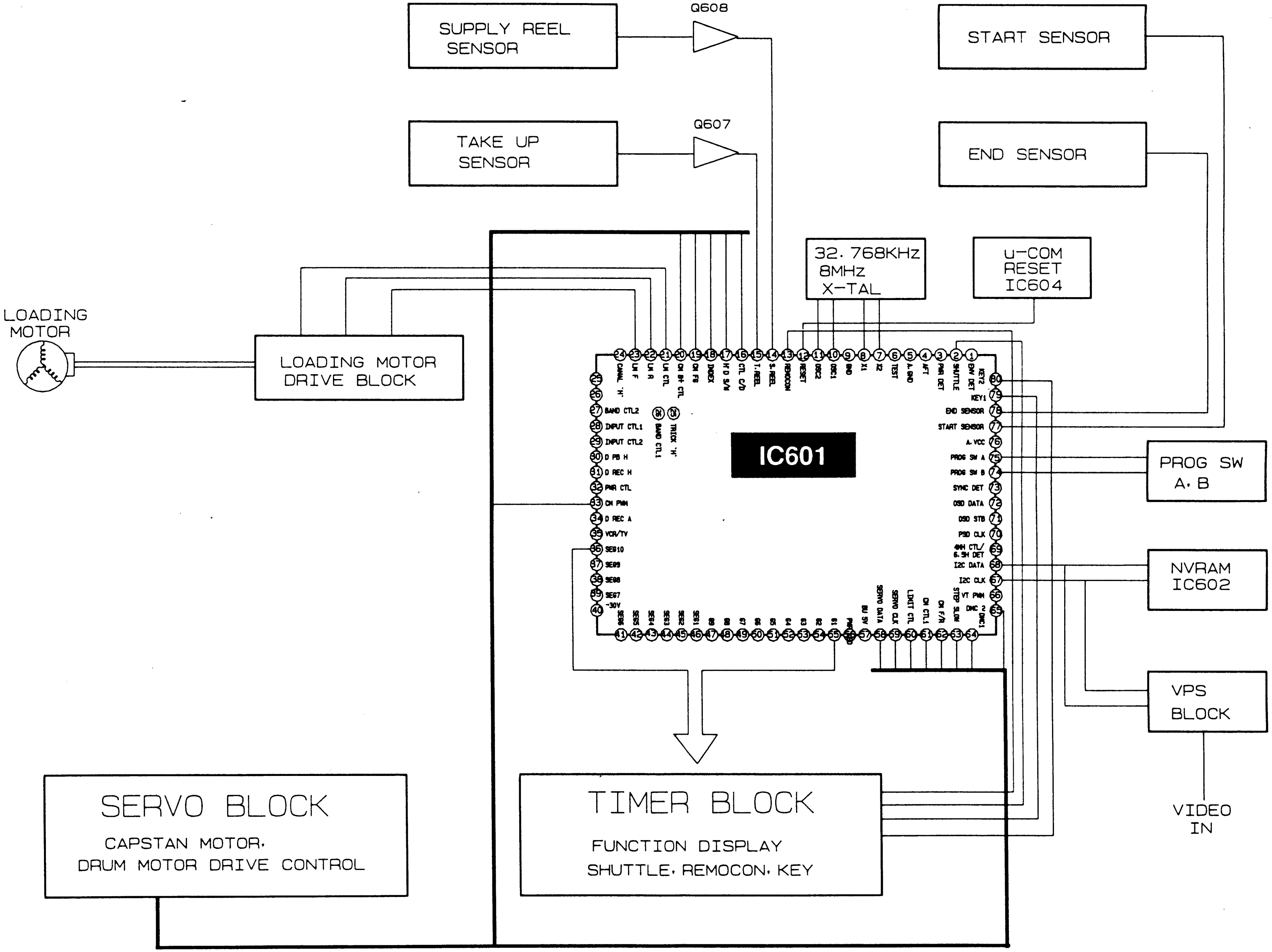

RF JACK
RF OUT
RF IN
U401
RF MOD.
VIDEO
AUDIO
U402
TUNER
DEM.
IC401
AUDIO
VIDEO
AC IN
220V
60HZ
MAIN BLOCK
IC302
Y/C
1CHIP
IC901
OSD
AUDIO
AUDIO
1 CHIP
IC501
PRE-AMP
IC301
VIDEO
PB
AMP
CCD
IC303
SMPS
BD01
PT01
IC201
SERVO
AL 33V
AL 19.5V
AL 15V
AL 5.8V
-27V
VF+
VF-
IC4302
VIDEO
INPUT
SELECTOR
VIDEO
AV
AUDIO
IN
OUT
IN
OUT
IC4303
AUDIO
INPUT
SELECTOR
CTL HEAD
SP CH1
SP CH2
EP CH1
EP CH2
VIDEO HEAD
CM
CAPSTAN FG
DM
DRUM FG
DRUM PG
CAPSTAN MOTOR DRIVE
DRUM MOTOR DRIVE
LINEAR AUDIO HEAD
IC601
LOADING MOTOR DRIVE
SYSCON
KEY MATRIX
VFD
REMOTE SENSOR
TAKE-UP REEL SENSOR
SUPPLY REEL SENSOR
START SENSOR
END SENSOR
PROGRAM SWITCH
REC SAFTY SWITCH
DC
LM
DECK
VIDEO
LINE IN
AUDIO
F/TIMER

11-3. OVERALL BLOCK DIAGRAM (2 SCART)

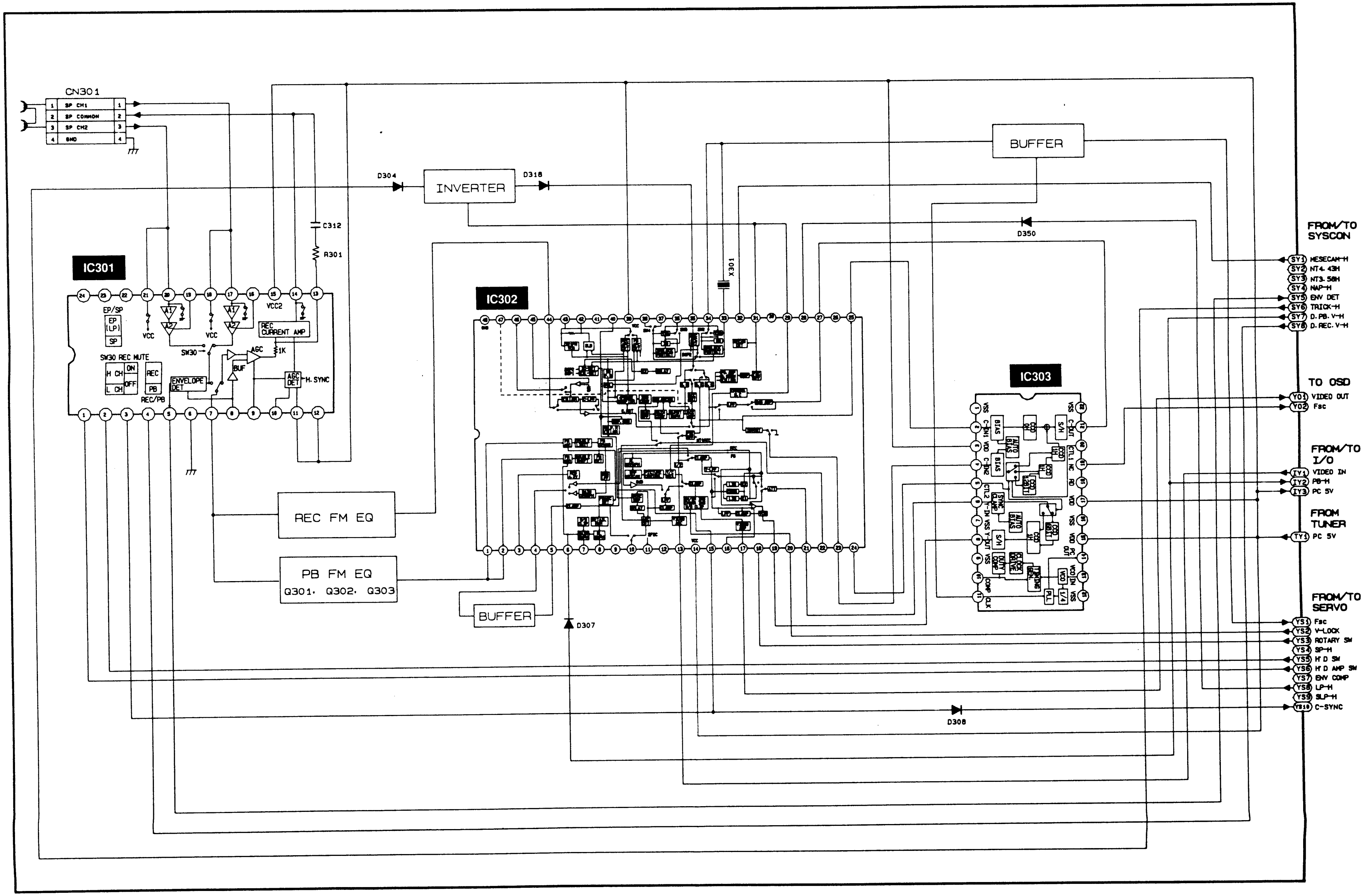


RF JACK
RF OUT
RF IN
U401
RF MOD.
VIDEO
AUDIO
U402
TUNER
DEM.
IC401
IC302
Y/C 1CHIP
IC901
OSD
MAIN BLOCK
AC IN 230V 50HZ
SMPS
BD01
PT01
AUDIO
IC501
AUDIO 1 CHIP
AUDIO
VIDEO
PRE-AMP
IC301
VIDEO PB AMP
CCD
IC303
IC201
SERVO
AL 33V
AL 19.5V
AL 15V
AL 5.8V
-27V
VF+
VF-
VIDEO
AV
AUDIO
IN
OUT
IN
OUT
CTL HEAD
SP CH1
SP CH2
EP CH1
EP CH2
VIDEO HEAD
IC4301
INPUT/OUT SELECTOR
CM
CAPSTAN FG
VIDEO
DECOD
AUDIO
IN
OUT
IN
OUT
DRUM FG
DRUM PG
CAPSTAN MOTOR DRIVE
DM
DRUM MOTOR DRIVE
IC601
LOADING MOTOR DRIVE
KEY MATRIX
VFD
REMOTE SENSOR
SYSCON
LINEAR AUDIO HEAD
VIDEO
LINE IN
AUDIO
TAKE-UP REEL SENSOR
SUPPLY REEL SENSOR
DC
LM
START SENSOR
END SENSOR
PROGRAM SWITCH
REC SAFTY SWITCH
DECK
F/TIMER

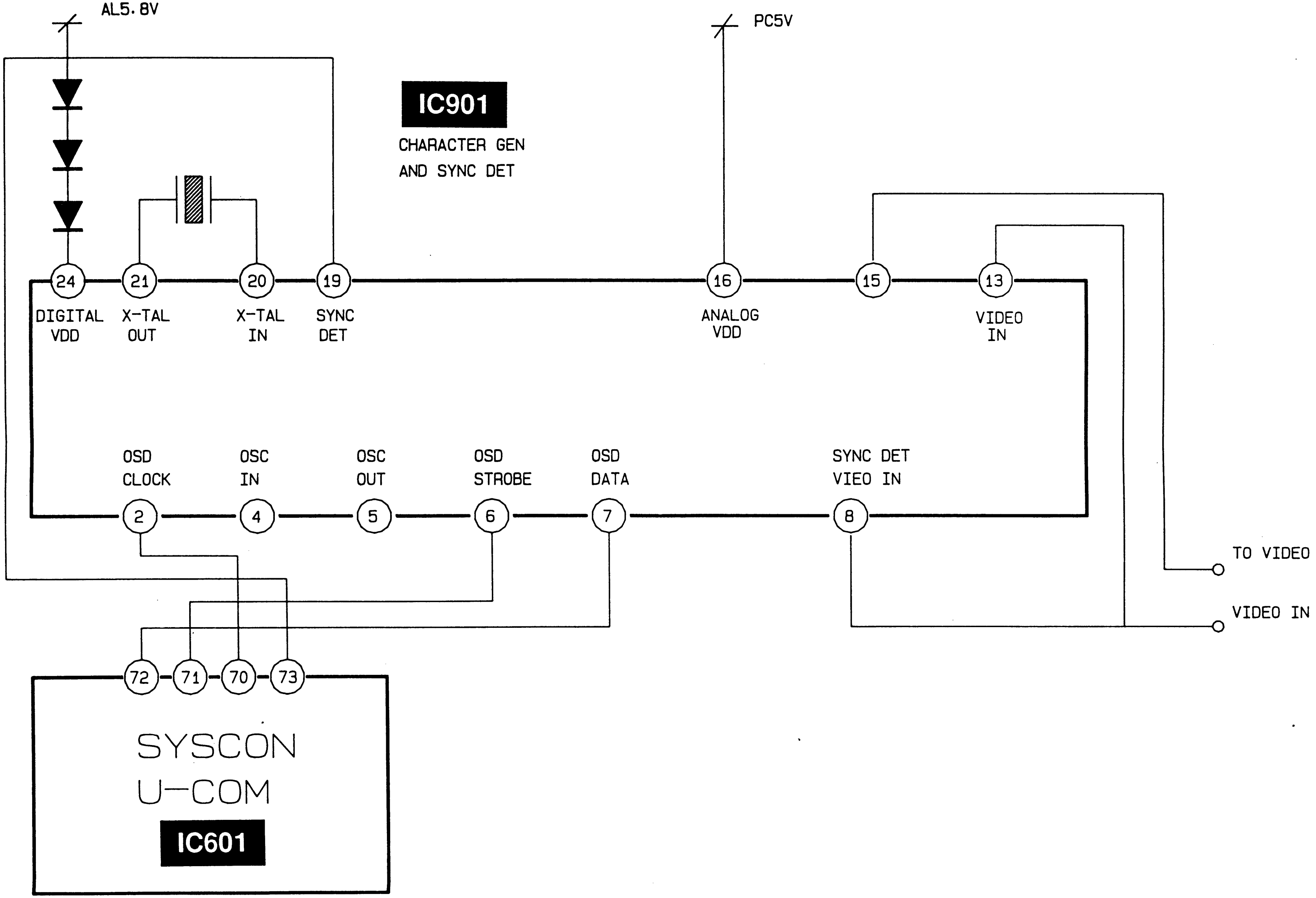
11-4. SYSTEM COTROL


SUPPLY REEL SENSOR
Q608
TAKE UP SENSOR
Q607
START SENSOR
END SENSOR
32.768KHz
8MHz
X-TAL
u-COM
RESET
IC604
LOADING MOTOR
LOADING MOTOR DRIVE BLOCK
IC601
1 ENV DET
2 SHUTTLE
3 PWR DET
4 AFT
5 A.GND
6 TEST
7 X2
8 X1
9 GND
10 OSC1
11 OSC2
12 RESET
13 REMOCON
14 S.REEL
15 T.REEL
16 CTL C/D
17 H/D S/W
18 INDEX
19 CM FG
20 CM B+ CTL
21 LM CTL
22 LM R
23 LM F
24 CANAL 'H'
25
26
25 TRICK 'H'
26 BAND CTL1
27 BAND CTL2
28 INPUT CTL1
29 INPUT CTL2
30 D PB H
31 D REC H
32 PWR CTL
33 CM PWM
34 D REC A
35 VCR/TV
36 SEG10
37 SEG9
38 SEG8
39 SEG7
40 -30V
41 SEG6
42 SEG5
43 SEG4
44 SEG3
45 SEG2
46 SEG1
47 G9
48 G8
49 G7
50 G6
51 G5
52 G4
53 G3
54 G2
55 G1
56 PWR GND
57 BU 5V
58 SERVO DATA
59 SERVO CLK
60 LIMIT CTL
61 CM CTL1
62 CM F/R
63 STEP SLOW
64 DMC1
65 DMC 2
66 VT PWM
67 I2C CLK
68 I2C DATA
69 4MH CTL/ 6.5H DET
70 PSD CLK
71 OSD STB
72 OSD DATA
73 SYNC DET
74 PROG SW B
75 PROG SW A
76 A.VCC
77 START SENSOR
78 END SENSOR
79 KEY1
80 KEY2
PROG SW A.B
NVRAM IC602
VPS BLOCK
VIDEO IN
SERVO BLOCK
CAPSTAN MOTOR,
DRUM MOTOR DRIVE CONTROL
TIMER BLOCK
FUNCTION DISPLAY
SHUTTLE, REMOCON, KEY

11-5 VIDEO


CN301
1 SP CH1 1
2 SP COMMON 2
3 SP CH2 3
4 GND 4
C312
R301
D304
INVERTER
D318
BUFFER
D350
X301
IC301
EP/SP
EP (LP)
SP
SW30 REC MUTE
H CH
L CH
ON
OFF
REC
PB
REC/PB
VCC
VCC
VCC2
A1
A2
SW30
AGC
1K
BUF
ENVELOPE DET
AGC DET
H. SYNC
REC CURRENT AMP
IC302
IC303
VSS
C-IN1
VDD
C-IN2
CTL2
Y-IN
VSS
Y-OUT
VSS
COMP
CLK
VSS
C-OUT
CTL1
NC
RO
VDD
VSS
VDD
PC OUT
VCO IN
VSS
BIAS
AUTO BIAS
BIAS
CCD 0H
S/H
CCD 1H
CCD 1H
CCD 128BIT
SYNC CLAMP
AUTO BIAS
CCD 68BIT
CCD 1H
S/H
DUTY COMP
CLOCK DRIVE
TIMING GEN.
VCO
PLL
1/4
REC FM EQ
PB FM EQ
Q301, Q302, Q303
BUFFER
D307
D308
FROM/TO SYSCON
SY1 MESECAM-H
SY2 NT4.43H
SY3 NT3.58H
SY4 NAP-H
SY5 ENV DET
SY6 TRICK-H
SY7 D.PB.V-H
SY8 D.REC.V-H
TO OSD
YO1 VIDEO OUT
YO2 Fsc
FROM/TO I/O
IY1 VIDEO IN
IY2 PB-H
IY3 PC 5V
FROM TUNER
TY1 PC 5V
FROM/TO SERVO
YS1 Fsc
YS2 V-LOCK
YS3 ROTARY SW
YS4 SP-H
YS5 H'D SW
YS6 H'D AMP SW
YS7 ENV COMP
YS8 LP-H
YS9 SLP-H
YS10 C-SYNC

11-6. O.S.D



AL5.8V
PC5V
IC901
CHARACTER GEN
AND SYNC DET
24
DIGITAL VDD
21
X-TAL OUT
20
X-TAL IN
19
SYNC DET
16
ANALOG VDD
15
13
VIDEO IN
OSD CLOCK
2
OSC IN
4
OSC OUT
5
OSD STROBE
6
OSD DATA
7
SYNC DET VIEO IN
8
TO VIDEO
VIDEO IN
72
71
70
73
SYSCON
U-COM
IC601

12. SCHEMATIC DIAGRAMS

Page

* SEMICONDUCTOR ---------------------- 12-1

* BLOCK IDENTIFICATION OF MAIN PCB ----- 12-2

12-1. SMPS/POWER ------------------------ 12-3

12-2. SYSTEM COTROL --------------------- 12-4

12-3. SERVO ---------------------------- 12-6

12-4. VIDEO ---------------------------- 12-8

12-5. AUDIO ---------------------------- 12-10

12-6. TUNER ---------------------------- 12-12

12-7. V.P.S ---------------------------- 12-13

12-8. I/O (2 SCART ONLY) ------------------ 12-14

12-9. I/O (1 SCART ONLY) ------------------ 12-16

12-10. P.D.C ---------------------------- 12-17

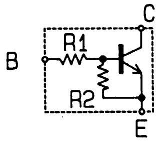
12-11. O.S.D ---------------------------- 12-18

12-12. FUNCTION-TIMER --------------------- 12-20

12-13. REMOTE CONTROL --------------------- 12-21

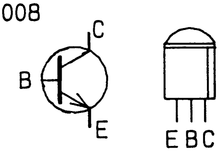
SEMICONDUCTOR

NPN TYPE

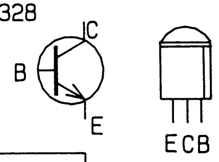


	R1	R2
KSR1001	4.7K	4.7K
KSR1002	10K	10K
KSR1004	47K	47K

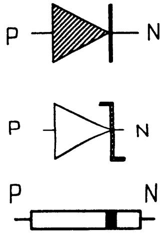
KSC945
KSC1008



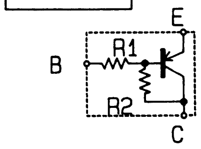
KSC2328



DIODE
ZENER DIODE

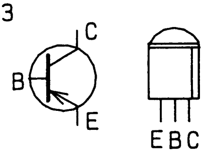


PNP TYPE

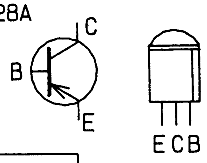


	R1	R2
KSR2001	4.7K	4.7K
KSR2002	10K	10K
KSR2004	47K	47K

2SD1468
KSA733

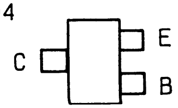


KSA928A



* CHIP TR

KSR2102
KSA928
KSR1104



NOTE

- For Schematic Diagram
  - Resistors are in ohms, 1/8W unless otherwise noted.
  - Circled numbers refer to waveforms.

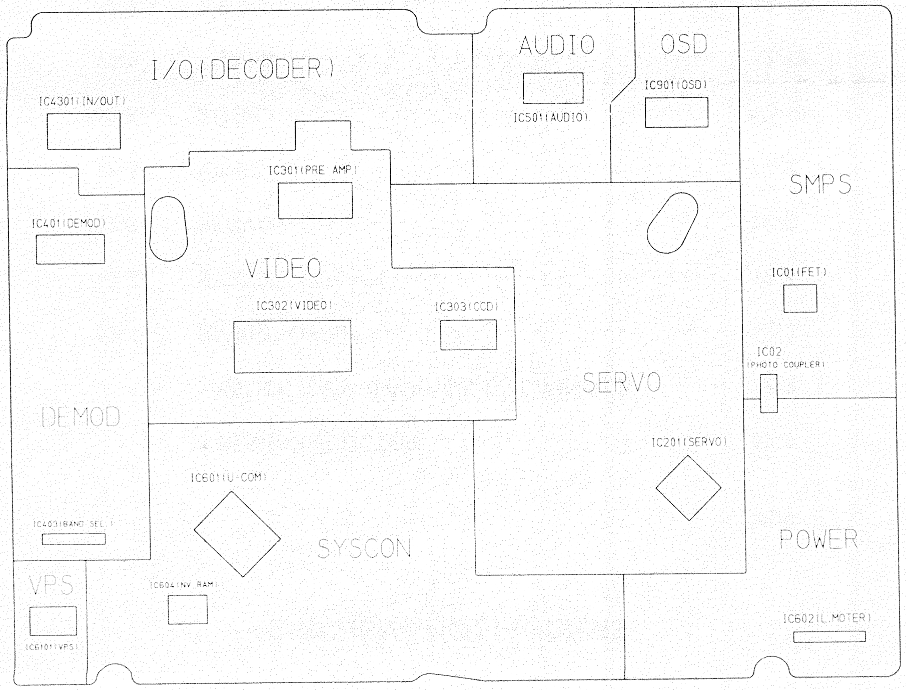
SPECIAL NOTE :
All integratedcircuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostically sensitive (ES) devices" section of this service manual.

NOTE :
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

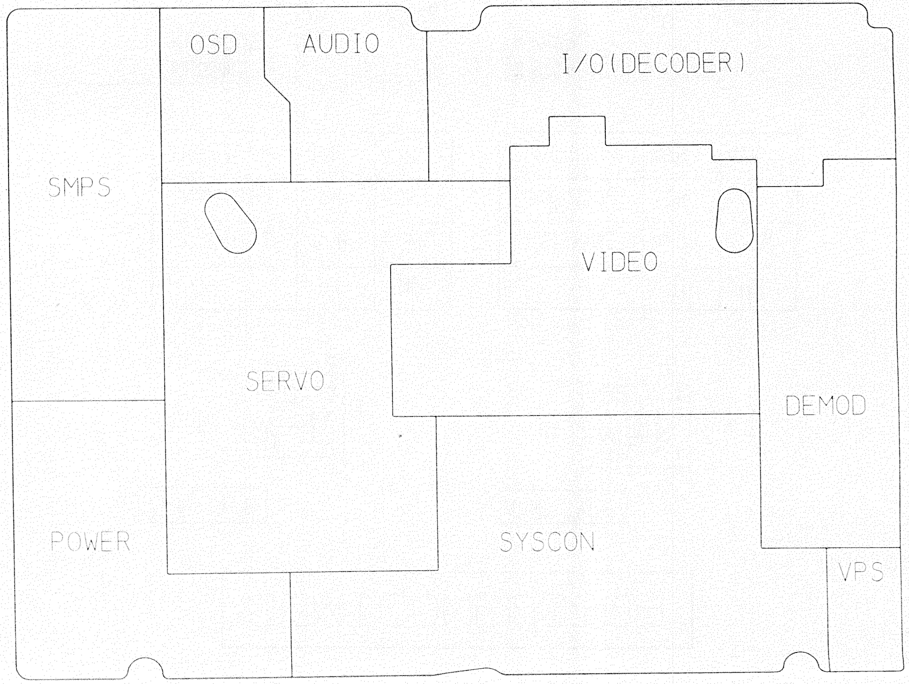
INFORTANT SAFETY NOTICES :
Components identified with the mark ⚠ have the special characteristics for safety when replacing any of these components. Use only the same type.

* BLOCK IDENTIFICATION OF MAIN PCB

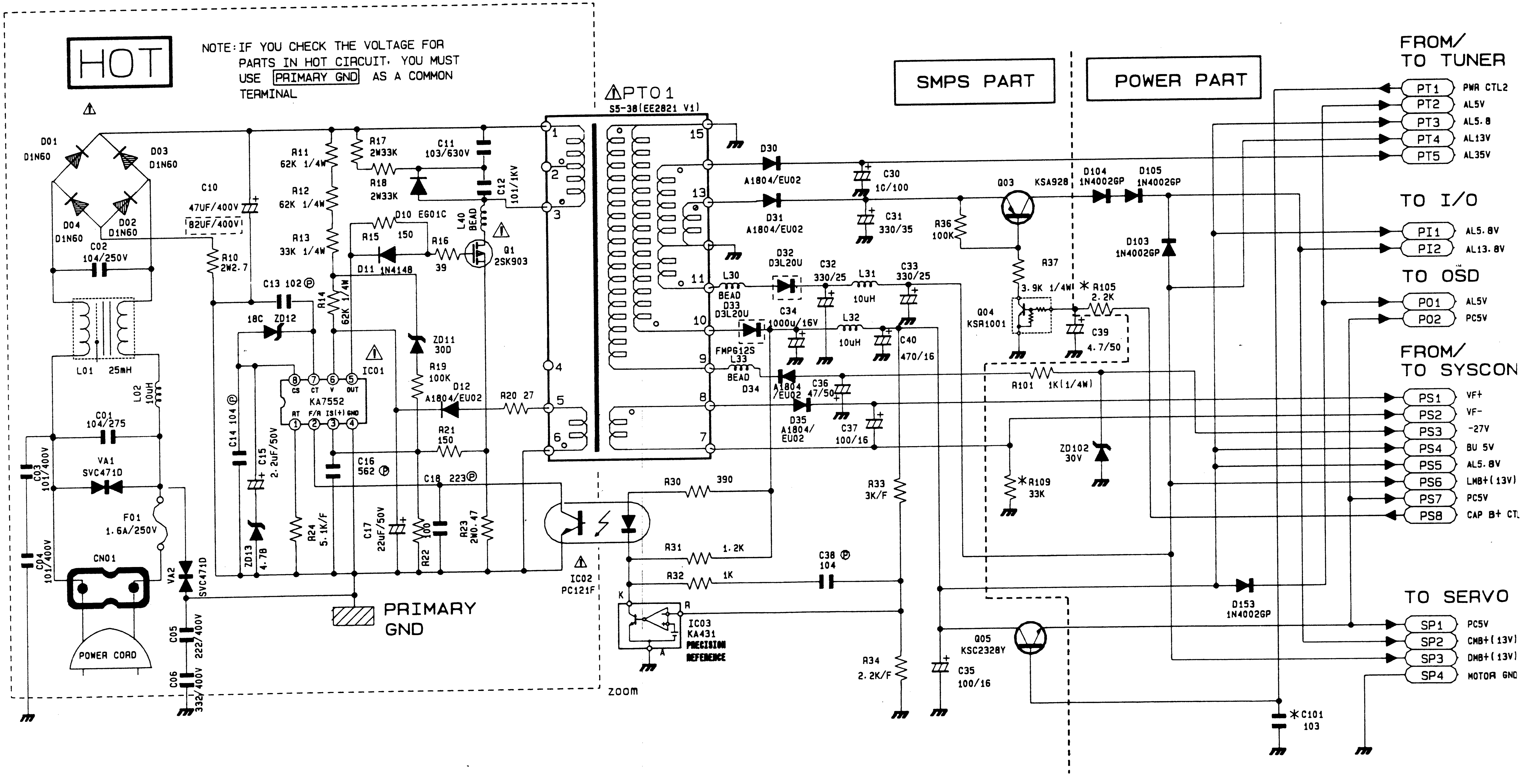
(TOP SIDE)


I/O(DECODER)
IC4301(IN/OUT)
AUDIO
IC501(AUDIO)
OSD
IC901(OSD)
IC301(PRE AMP)
IC401(DEMOD)
SMPS
VIDEO
IC302(VIDEO)
IC303(CCD)
IC01(FET)
IC02
(PHOTO COUPLER)
SERVO
DEMOD
IC201(SERVO)
IC601(U-COM)
IC403(BAND SEL.)
SYSCON
POWER
VPS
IC604(NV RAM)
IC602(L.MOTER)
IC6101(VPS)

(BOTTOM SIDE)

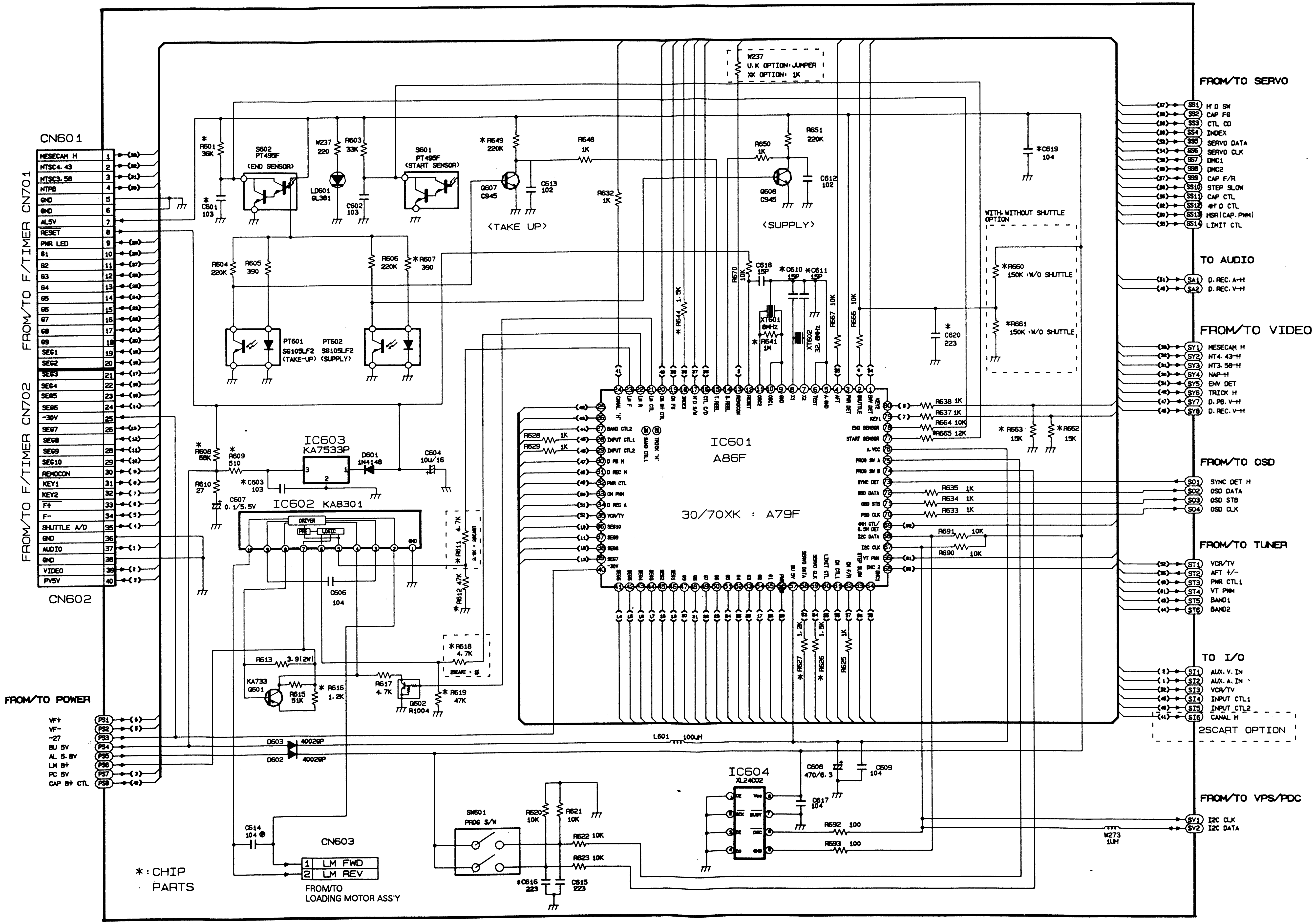

OSD
AUDIO
I/O(DECODER)
SMPS
VIDEO
SERVO
DEMOD
POWER
SYSCON
VPS

12-1. SMPS/POWER


HOT
NOTE: IF YOU CHECK THE VOLTAGE FOR PARTS IN HOT CIRCUIT, YOU MUST USE PRIMARY GND AS A COMMON TERMINAL
SMPS PART
POWER PART
PT01
S5-38(EE2821 V1)
D01 D1N60
D03 D1N60
D04 D1N60
D02 D1N60
C02 104/250V
C10 47UF/400V
82UF/400V
R10 2W2.7
R11 62K 1/4W
R12 62K 1/4W
R13 33K 1/4W
R14 62K 1/4W
R17 2W33K
R18 2W33K
C11 103/630V
C12 101/1KV
D10 EG01C
R15 150
R16 39
L40 BEAD
Q1 2SK903
D11 1N4148
C13 102
18C ZD12
ZD11 30D
R19 100K
D12 A1804/EU02
R20 27
R21 150
IC01 KA7552
CS CT V OUT
RT F/R IS(+) GND
C14 104
C15 2.2uF/50V
ZD13 4.7B
R24 5.1K/F
C16 562
C17 22uF/50V
R22
C18 223
R23 2W0.47
L01 25mH
L02 10uH
C01 104/275
C03 101/400V
VA1 SVC471D
F01 1.6A/250V
C04 101/400V
CN01
POWER CORD
VA2 SVC471D
C05 222/400V
C06 332/400V
PRIMARY GND
IC02 PC121F
D30 A1804/EU02
D31 A1804/EU02
C30 10/100
C31 330/35
D32 D3L20U
C32 330/25
L31 10uH
C33 330/25
L30 BEAD
D33 D3L20U
C34 1000u/16V
L32 10uH
C40 470/16
FMPG12S
L33 BEAD
D34 A1804/EU02
C36 47/50
D35 A1804/EU02
C37 100/16
R30 390
R31 1.2K
R32 1K
C38 104
R33 3K/F
R34 2.2K/F
IC03 KA431 PRECISION REFERENCE
K R A
Q03 KSA928
R36 100K
R37 3.9K 1/4W
Q04 KSR1001
R105 2.2K
C39 4.7/50
R101 1K(1/4W)
R109 33K
ZD102 30V
Q05 KSC2328Y
C35 100/16
D104 1N4002GP
D105 1N4002GP
D103 1N4002GP
D153 1N4002GP
C101 103
FROM/ TO TUNER
PT1 PWR CTL2
PT2 AL5V
PT3 AL5.8
PT4 AL13V
PT5 AL35V
TO I/O
PI1 AL5.8V
PI2 AL13.8V
TO OSD
PO1 AL5V
PO2 PC5V
FROM/ TO SYSCON
PS1 VF+
PS2 VF-
PS3 -27V
PS4 BU 5V
PS5 AL5.8V
PS6 LMB+(13V)
PS7 PC5V
PS8 CAP B+ CTL
TO SERVO
SP1 PC5V
SP2 CMB+(13V)
SP3 DMB+(13V)
SP4 MOTOR GND
zoom

* : CHIP PART

12-2. SYSTEM COTROL

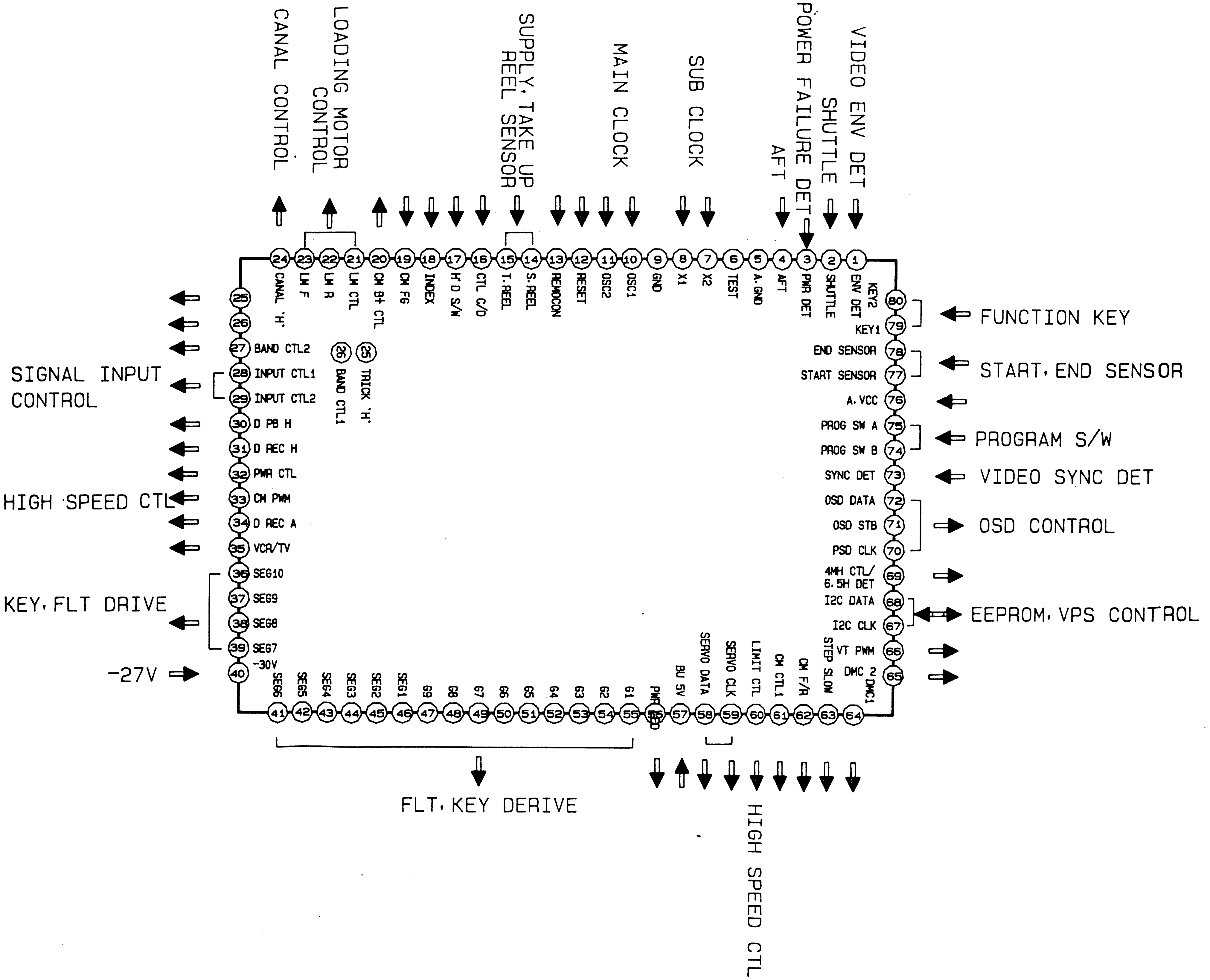

CN601
FROM/TO F/TIMER CN701
FROM/TO F/TIMER CN702
CN602
MESECAM H
NTSC4.43
NTSC3.58
NTPB
GND
AL5V
RESET
PWR LED
G1
G2
G3
G4
G5
G6
G7
G8
G9
SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
-30V
SEG7
SEG8
SEG9
SEG10
REMOCON
KEY1
KEY2
F+
F-
SHUTTLE A/D
AUDIO
VIDEO
PV5V
FROM/TO POWER
VF+
VF-
-27
BU 5V
AL 5.8V
LM B+
PC 5V
CAP B+ CTL
W237
U.K OPTION: JUMPER
XX OPTION: 1K
S602 PT495F (END SENSOR)
S601 PT495F (START SENSOR)
LD601 GL381
Q607 C945
<TAKE UP>
Q608 C945
<SUPPLY>
PT601 PT602 SG105LF2 SG105LF2 (TAKE-UP) (SUPPLY)
IC603 KA7533P
D601 1N4148
IC602 KA8301
DRIVER
LOGIC
IC601 A86F
30/70XK : A79F
XT601 8MHz
XT602 32.8KHz
WITH WITHOUT SHUTTLE OPTION
R660 150K : W/O SHUTTLE
R661 150K : W/O SHUTTLE
KA733 Q601
Q602 R1004
IC604 XL24C02
SW601 PROG S/W
CN603
1 LM FWD
2 LM REV
FROM/TO LOADING MOTOR ASS'Y
D603 4002GP
D602 4002GP
L601 100uH
W273 1UH
FROM/TO SERVO
SS1 H'D SW
SS2 CAP FG
SS3 CTL CD
SS4 INDEX
SS5 SERVO DATA
SS6 SERVO CLK
SS7 DMC1
SS8 DMC2
SS9 CAP F/R
SS10 STEP SLOW
SS11 CAP CTL
SS12 4H'D CTL
SS13 HSR(CAP.PWM)
SS14 LIMIT CTL
TO AUDIO
SA1 D.REC.A-H
SA2 D.REC.V-H
FROM/TO VIDEO
SY1 MESECAM H
SY2 NT4.43-H
SY3 NT3.58-H
SY4 NAP-H
SY5 ENV DET
SY6 TRICK H
SY7 D.PB.V-H
SY8 D.REC.V-H
FROM/TO OSD
SO1 SYNC DET H
SO2 OSD DATA
SO3 OSD STB
SO4 OSD CLK
FROM/TO TUNER
ST1 VCR/TV
ST2 AFT +/-
ST3 PWR CTL1
ST4 VT PWM
ST5 BAND1
ST6 BAND2
TO I/O
SI1 AUX.V.IN
SI2 AUX.A.IN
SI3 VCR/TV
SI4 INPUT CTL1
SI5 INPUT CTL2
SI6 CANAL H
2SCART OPTION
FROM/TO VPS/PDC
SV1 I2C CLK
SV2 I2C DATA

*: CHIP PARTS

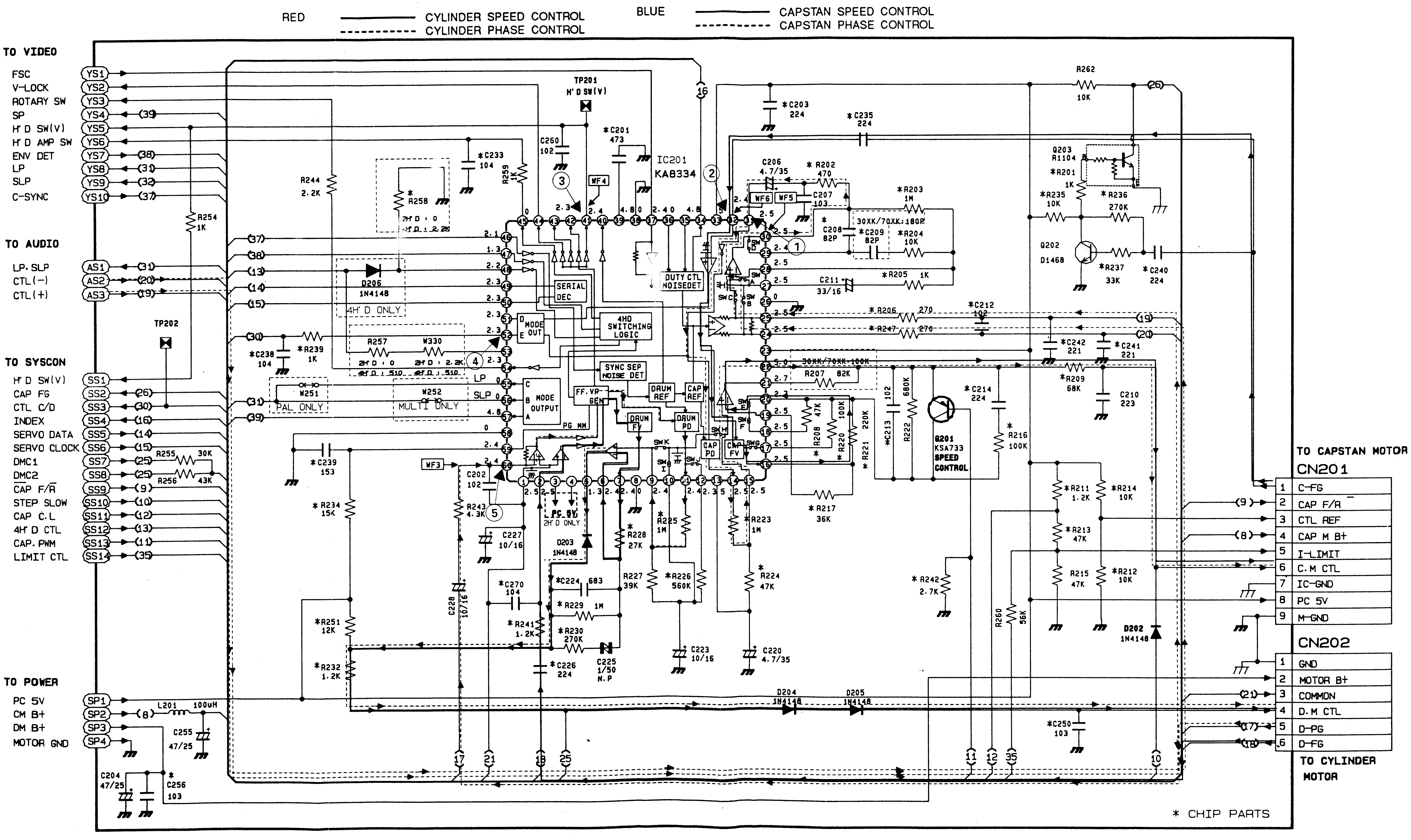
MODE / PIN NO	STOP	REC	PLAY
IC601			
1	2.3	0	2.6
2	2.6	2.6	2.6
3	0.2	5.0	5.0
4	5.0	4.6	4.6
5	0	0	0
6	0	0	0
7	1.5	2.4	2.4
8			
9	0	0	0
10	3.8	3.8	3.8
11	4.4	4.4	4.4
12	4.0	5.0	5.0
13	5.0	5.0	5.0
14	4.6	5.0	5.0
15	0	5.0	5.0
16	4.9	5.0	5.0
17	5.0	5.0	5.0
18	5.0	5.0	5.0
19	0	5.0	5.0
20	0	0	0
21	4.8	4.8	4.8
22	4.6	4.8	4.8
23	4.6	4.8	4.8
24	0	0	0
25	0	0	0
26	0	0	0
27	5.0	5.0	5.0
28	5.0	5.0	5.0
29	0	0	0
30	0.2	0.2	5.0
31	0	4.8	0
32	5.0	5.0	5.0
33	4.8	4.8	4.8
34	0	5.0	0
35	5.0	5.0	5.0
36	-27.0	-27.0	-27.0
37	-27.0	-27.0	-27.0
38	-27.0	-27.0	-27.0
39	-27.0	-27.0	-27.0
39	-27.0	-27.0	-27.0
40	-27.0	-27.0	-27.0
41	-27.0	-27.0	-27.0
42	-27.0	-27.0	-27.0
43	-27.0	-27.0	-27.0
44	-27.0	-27.0	-27.0
45	-27.0	-27.0	-27.0

MODE / PIN NO	STOP	REC	PLAY
46	-27.0	-27.0	-27.0
47	-27.0	-27.0	-27.0
48	-27.0	-27.0	-27.0
49	-27.0	-27.0	-27.0
50	-27.0	-27.0	-27.0
51	-27.0	-27.0	-27.0
52	-27.0	-27.0	-27.0
53	-27.0	-27.0	-27.0
54	-27.0	-27.0	-27.0
55	-27.0	-27.0	-27.0
56	5.0	5.0	5.0
57	5.0	5.0	5.0
58	5.0	5.0	5.0
59	5.0	5.0	5.0
60	2.4	2.4	2.4
61	0.2	4.9	4.9
62	4.9	4.9	4.9
63	0	0	0
64	2.2	2.2	2.2
65	2.2	2.2	2.2
66	5.0	5.0	5.0
67	5.0	5.0	5.0
68	5.0	5.0	5.0
69	0	0	0
70	4.9	4.9	4.9
71	4.9	4.9	4.9
72	5.0	5.0	5.0
73	5.0	0	0
74	4.9	0	0
75	4.9	4.9	4.9
76	5.0	5.0	5.0
77	4.8	4.8	4.8
78	5.0	5.0	5.0
79	4.4	4.4	4.4
80	4.4	4.4	4.4

IC601 HD6433726


CANAL CONTROL
LOADING MOTOR CONTROL
SUPPLY, TAKE UP REEL SENSOR
MAIN CLOCK
SUB CLOCK
POWER FAILURE DET
AFT
SHUTTLE
VIDEO ENV DET
1 ENV DET
2 SHUTTLE
3 PWR DET
4 AFT
5 A.GND
6 TEST
7 X2
8 X1
9 GND
10 OSC1
11 OSC2
12 RESET
13 REMOCON
14 S.REEL
15 T.REEL
16 CTL C/D
17 H'D S/W
18 INDEX
19 CM FG
20 CM B+ CTL
21 LM CTL
22 LM R
23 LM F
24 CANAL 'H'
25 TRICK 'H'
26 BAND CTL1
27 BAND CTL2
28 INPUT CTL1
29 INPUT CTL2
30 D PB H
31 D REC H
32 PWR CTL
33 CM PWM
34 D REC A
35 VCR/TV
36 SEG10
37 SEG9
38 SEG8
39 SEG7
40 -30V
41 SEG6
42 SEG5
43 SEG4
44 SEG3
45 SEG2
46 SEG1
47 G9
48 G8
49 G7
50 G6
51 G5
52 G4
53 G3
54 G2
55 G1
56 PWR SED
57 BU 5V
58 SERVO DATA
59 SERVO CLK
60 LIMIT CTL
61 CM CTL1
62 CM F/R
63 STEP SLOW
64 DMC1
65 DMC 2
66 VT PWM
67 I2C CLK
68 I2C DATA
69 4MH CTL/ 6.5H DET
70 PSD CLK
71 OSD STB
72 OSD DATA
73 SYNC DET
74 PROG SW B
75 PROG SW A
76 A.VCC
77 START SENSOR
78 END SENSOR
79 KEY1
80 KEY2
SIGNAL INPUT CONTROL
HIGH SPEED CTL
KEY, FLT DRIVE
-27V
FUNCTION KEY
START, END SENSOR
PROGRAM S/W
VIDEO SYNC DET
OSD CONTROL
EEPROM, VPS CONTROL
FLT, KEY DERIVE
HIGH SPEED CTL

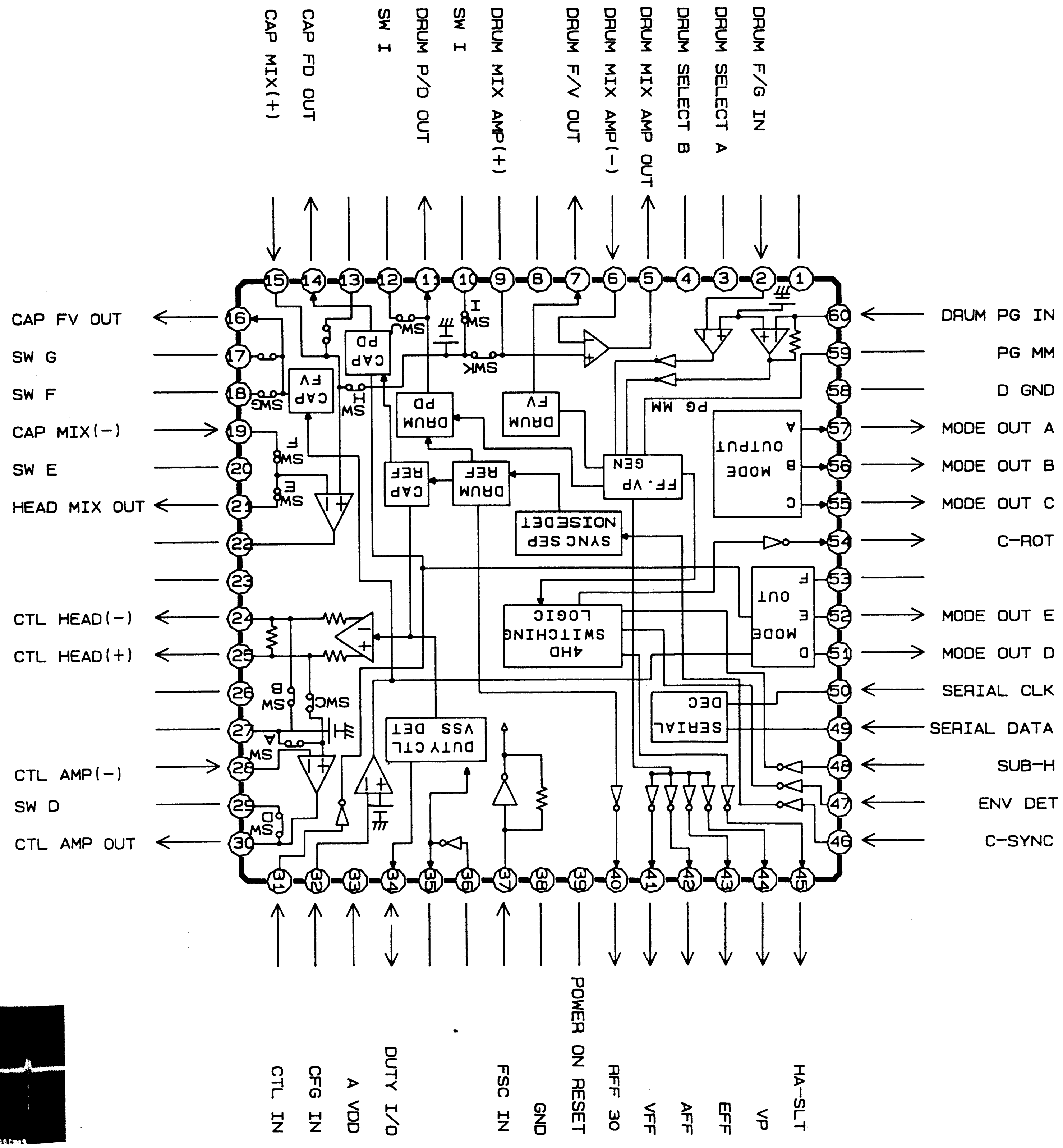
12-3. SERVO


RED
CYLINDER SPEED CONTROL
CYLINDER PHASE CONTROL
BLUE
CAPSTAN SPEED CONTROL
CAPSTAN PHASE CONTROL
TO VIDEO
FSC YS1
V-LOCK YS2
ROTARY SW YS3
SP YS4
H'D SW(V) YS5
H'D AMP SW YS6
ENV DET YS7
LP YS8
SLP YS9
C-SYNC YS10
TO AUDIO
LP. SLP AS1
CTL(−) AS2
CTL(+) AS3
TO SYSCON
H'D SW(V) SS1
CAP FG SS2
CTL C/D SS3
INDEX SS4
SERVO DATA SS5
SERVO CLOCK SS6
DMC1 SS7
DMC2 SS8
CAP F/R SS9
STEP SLOW SS10
CAP C.L SS11
4H'D CTL SS12
CAP. PWM SS13
LIMIT CTL SS14
TO POWER
PC 5V SP1
CM B+ SP2
DM B+ SP3
MOTOR GND SP4
TP201 H'D SW(V)
TP202
IC201 KA8334
SERIAL DEC
4HD SWITCHING LOGIC
MODE OUT
MODE OUTPUT
SYNC SEP NOISE DET
FF. VP-GEN
DRUM REF
CAP REF
DRUM FV
DRUM PD
CAP PD
CAP FV
DUTY CTL NOISEDET
PAL ONLY
MULTI ONLY
4H'D ONLY
2H'D ONLY
PC 5V
D206 1N4148
D203 1N4148
D204 1N4148
D205 1N4148
D202 1N4148
Q201 KSA733 SPEED CONTROL
Q202 D1468
Q203 R1104
L201 100uH
TO CAPSTAN MOTOR
CN201
1 C-FG
2 CAP F/R
3 CTL REF
4 CAP M B+
5 I-LIMIT
6 C.M CTL
7 IC-GND
8 PC 5V
9 M-GND
CN202
1 GND
2 MOTOR B+
3 COMMON
4 D.M CTL
5 D-PG
6 D-FG
TO CYLINDER MOTOR
* CHIP PARTS

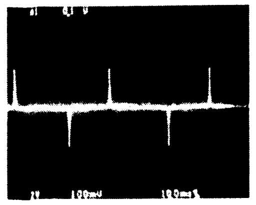
MODE / PIN NO	STOP	REC	PLAY
IC201			
1	2.5	2.4	2.5
2	2.5	2.5	2.5
3	2.5	2.5	2.5
4	2.5	2.5	2.5
5	1.6	1.6	1.6
6	2.5	2.5	2.5
7	2.5	2.5	2.5
8	0	0	0
9	2.5	2.5	2.5
10	1.8	0.2	0
11	2.5	2.5	2.5
12	2.3	2.3	2.3
13	5.0	5.0	5.0
14	5.0	2.5	2.5
15	2.5	2.5	2.5
16	0	0	2.5
17	0.8	2.5	2.5
18	0.1	2.5	2.5
19	1.1	2.5	2.5
20	5.0	2.6	2.6
21	5.0	2.6	2.6
22	5.0	5.0	5.0
23	0	0	0
24	2.5	2.5	2.2
25	2.5	2.8	2.8
26	0	0	0
27	2.5	2.5	2.5
28	2.5	2.5	2.5
29	2.5	2.5	2.5
30	2.5	2.5	2.5
31	2.5	2.5	2.5
32	2.5	2.5	2.5

MODE / PIN NO	STOP	REC	PLAY
33	5.0	5.0	5.0
34	5.0	3.0	2.0
35	5.0	5.0	0
36	0	0	0
37	2.4	2.4	2.4
38	0	0	0
39	4.9	4.9	4.9
40	2.5	2.5	2.5
41	2.4	2.4	2.4
42	2.4	0	2.4
43	2.4	2.4	2.4
44	0	0	0
45	4.9	0	0
46	2.7	2.7	0.7
47	0.8	0.8	0
48	0.9	0.9	0.9
49	0.6	0.6	0.6
50	0.7	0.7	0.7
51	0	2.3	2.3
52	4.9	4.9	1.9
53	0	0	0
54	2.3	2.3	2.3
55	0	0	0
56	0	0	0
57	4.8	0	4.8
58	0	0	0
59	0	0.3	0.3
60	2.4	2.4	2.4

IC201 KA8334

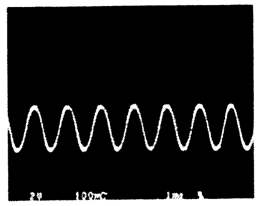

CAP MIX(+)
CAP FD OUT
SW I
DRUM P/D OUT
SW I
DRUM MIX AMP(+)
DRUM F/V OUT
DRUM MIX AMP(-)
DRUM MIX AMP OUT
DRUM SELECT B
DRUM SELECT A
DRUM F/G IN
CAP FV OUT
SW G
SW F
CAP MIX(-)
SW E
HEAD MIX OUT
CTL HEAD(-)
CTL HEAD(+)
CTL AMP(-)
SW D
CTL AMP OUT
DRUM PG IN
PG MM
D GND
MODE OUT A
MODE OUT B
MODE OUT C
C-ROT
MODE OUT E
MODE OUT D
SERIAL CLK
SERIAL DATA
SUB-H
ENV DET
C-SYNC
CTL IN
CFG IN
A VDD
DUTY I/O
FSC IN
GND
POWER ON RESET
AFF 30
VFF
AFF
EFF
VP
HA-SLT
CAP PD
CAP FV
DRUM PD
DRUM FV
CAP REF
DRUM REF
SYNC SEP NOISEDET
FF.VP GEN
MODE OUTPUT A B C
PG MM
4HD SWITCHING LOGIC
MODE OUT D E F
SERIAL DEC
DUTY CTL VSS DET
SWK
MS

①



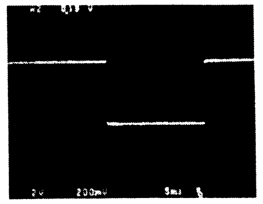
IC201-31
3.2Vp-p
PB

②



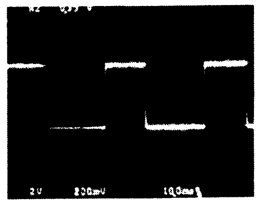
IC201-32
2Vp-p
PB

③



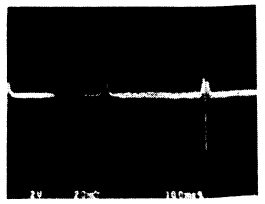
IC201-41
5Vp-p
PB

④



IC201-52
5Vp-p
PB

⑤

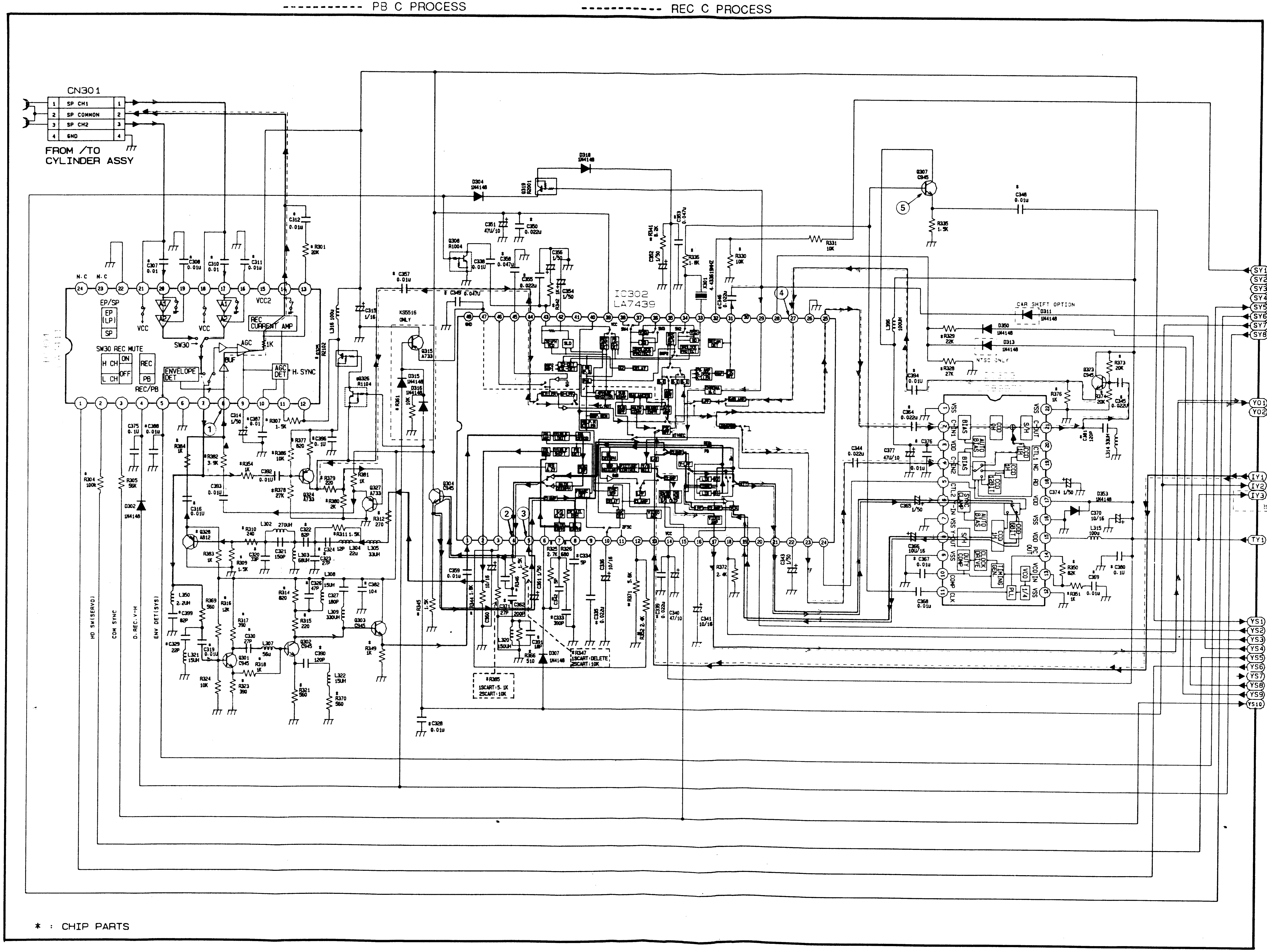


IC201-60
420mVp-p
PB

12-4. VIDEO

RED ——— PB Y PROCESS
- - - - - PB C PROCESS

BLUE ——— REC Y PROCESS
- - - - - REC C PROCESS


CN301
1 SP CH1
2 SP COMMON
3 SP CH2
4 GND
FROM /TO CYLINDER ASSY
EP/SP
EP
(LP)
SP
SW30 REC MUTE
H CH
L CH
ON
OFF
REC
PB
REC/PB
ENVELOPE DET
REC CURRENT AMP
AGC
AGC DET
H. SYNC
BUF
VCC
VCC2
SW30
N.C
IC302
LA7439
KS5516 ONLY
CAR SHIFT OPTION
NTSC ONLY
FROM/TO SYSCON
SY1 MESECAM-H
SY2 NT4. 43H
SY3 NT3. 58H
SY4 NAP-H
SY5 ENV DET
SY6 TRICK-H
SY7 D.PB. V-H
SY8 D.REC. V-H
TO OSD
YO1 VIDEO OUT
YO2 Fsc
FROM/TO I/O
IY1 VIDEO IN
IY2 PB-H
IY3 PC 5V
2SCART ONLY
FROM TUNER
TY1 PC 5V
FROM/TO SERVO
YS1 Fsc
YS2 V-LOCK
YS3 ROTARY SW
YS4 SP-H
YS5 H'D SW
YS6 H'D AMP SW
YS7 ENV COMP
YS8 LP-H
YS9 SLP-H
YS10 C-SYNC
HD SW(SERVO)
COM SYNC
D-REC.V-H
ENV DET(SYS)
R385 1SCART:5.1K 2SCART:10K
R347 1SCART:DELETE 2SCART:10K
VSS
C-IN1
VDD
C-IN2
CTL2
Y-IN
Y-OUT
COMP
CLK
BIAS
AUTO BIAS
CCD 1H
S/H
CTL1
NC
PCT
VCO IN
PLL
1/4
TIMING GEN
CLOCK DRIVE
DUTY COMP
SYNC CLAMP

* : CHIP PARTS

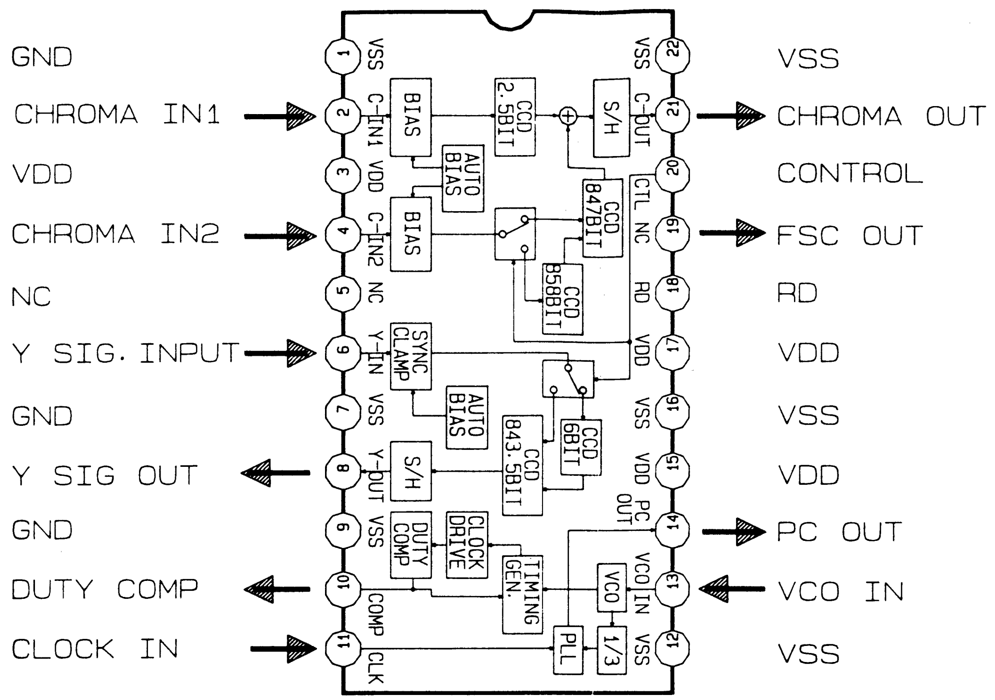
MODE PIN NO	E/E	PLAY	REC
IC302			
1	5.0	3.6	3.0
2	2.4	3.6	2.5
3	4.2	4.2	4.2
4	2.1	2.6	2.1
5	2.8	3.0	2.8
6	1.8	4.8	2.8
7	2.0	4.3	2.0
8	2.6	2.8	2.6
9	2.5	2.5	2.5
10	1.4	1.5	1.5
11	2.0	2.0	2.1
12	2.9	2.9	2.9
13	2.6	3.1	2.6
14	5.0	5.0	5.0
15	0.2	0.1	0.1
16	3.1	3.1	3.1
17	0.8	0.9	0.9
18	2.5	0	2.5
19	2.0	2.0	2.0
20	0	0	0
21	1.0	1.0	1.0
22	2.2	2.2	2.2
23	2.5	2.1	2.3
24	0	0	0
25	2.5	2.2	2.4
26	0	0	0
27	2.5	2.4	2.5
28	0.8	2.5	0.8
29	1.9	1.8	1.9
30	0	0	0
31	0	2.4	0
32	0	0.4	0.4
33	3.6	3.6	3.6
34	2.5	2.4	2.5
35	0	2.0	2.2
36	0	0	0
37	0	0	0
38	0	0	0
39	5.0	5.0	5.0
40	0.1	0.1	0.1
41	0	0	0
42	2.8	2.8	2.8
43	2.8	2.8	2.8
44	2.3	3.2	2.2
45	2.0	2.0	2.0
46	0	0	0
47	1.8	1.2	1.8
48	0	0	0

MODE PIN NO	E/E	PLAY	REC
IC301			
1	5.0	5.0	5.0
2	1.8	1.8	1.8
3	0.2	0.2	2.7
4	0	0	4.6
5	0.7	4.7	0
6	0	0	0
7	2.2	2.2	3.6
8	0	0	3.6
9	0	0	1.6
10	2.6	2.6	1.6
11	5.0	5.0	4.2
12	5.0	5.0	5.0
13	0.1	0.1	1.6
14	0	0	4.0
15	5.0	5.0	5.0
16	2.1	2.1	3.7
17	0.7	0.7	0.1
18	0	0	4.1
19	2.0	2.0	3.6
20	0.6	0.6	0.1
21	0	0	4.0
22	0	0	0
23	0	0	0
24	0	0	0

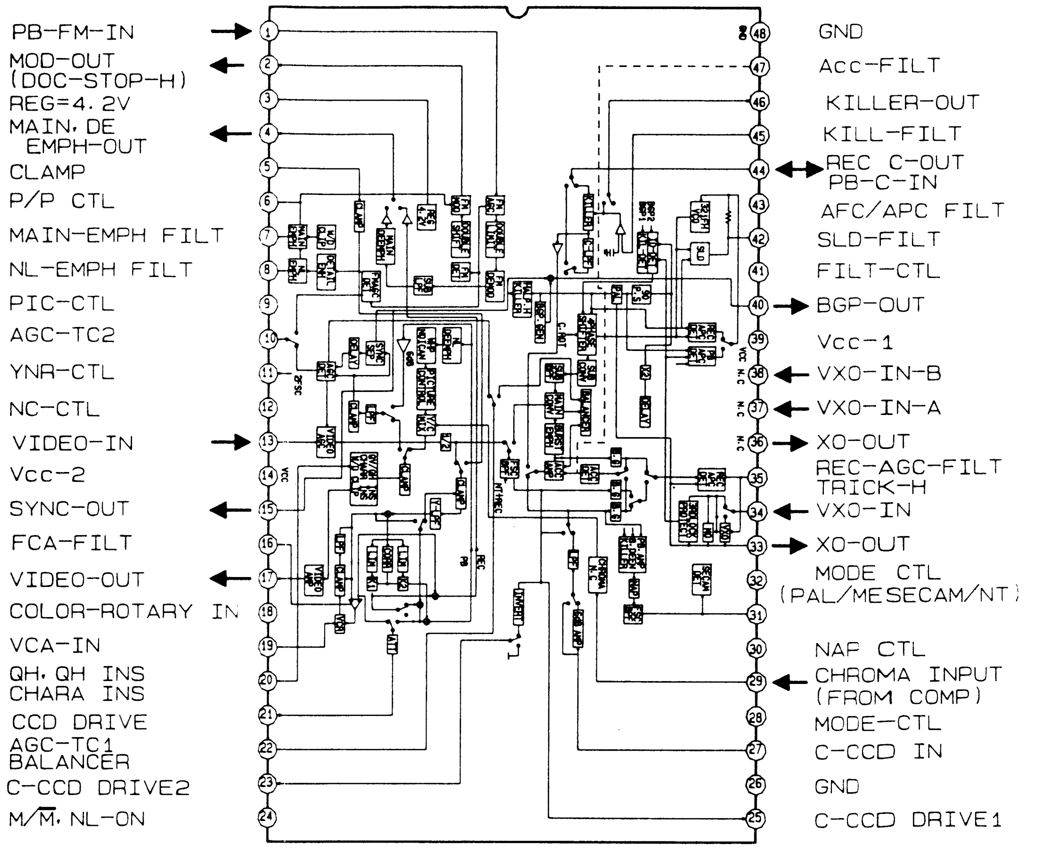
MODE PIN NO	E/E	PLAY	REC
IC303			
1	0	0	0
2	2.2	2.0	2.2
3	5.0	5.0	5.0
4	2.2	2.0	2.2
5	0	0	0
6	2.2	2.2	2.2
7	0	0	0
8	1.0	1.0	1.0
9	0	0	0
10	0	2.3	2.3
11	1.0	1.0	1.0
12	0	0	0
13	2.0	2.0	2.0
14	2.0	2.0	2.0
15	5.0	5.0	5.0
16	0	0	0
17	5.0	5.0	5.0
18	8.5	8.5	8.5
19	3.2	3.2	3.2
20	0	0	0
21	1.2	1.0	1.2
22	0	0	0

MODE PIN NO	E/E	PLAY	REC
Q301			
E	1.4	1.4	1.4
C	3.4	3.4	3.4
B	2.1	2.1	2.1
Q302			
E	0.7	0.7	0.7
C	4.6	4.6	4.6
B	1.4	1.4	1.4
Q303			
E	4.0	4.0	4.0
C	5.0	5.0	5.0
B	4.6	4.6	4.6
Q304			
E	1.4	2.0	1.4
C	5.0	5.0	5.0
B	2.1	3.0	2.1
Q315			
E	5.0	5.0	5.0
C	5.0	3.6	3.0
B	0.7	4.3	4.3

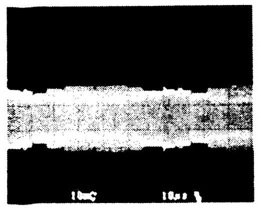
IC303 LC89970


GND
CHROMA IN1
VDD
CHROMA IN2
NC
Y SIG. INPUT
GND
Y SIG OUT
GND
DUTY COMP
CLOCK IN
VSS
CHROMA OUT
CONTROL
FSC OUT
RD
VDD
VSS
VDD
PC OUT
VCO IN
VSS
VSS
C-IN1
VDD
C-IN2
NC
Y-IN
VSS
Y-OUT
VSS
COMP
CLK
C-OUT
CTL
NC
RD
PC OUT
VCO IN
BIAS
AUTO BIAS
CCD 2.5BIT
S/H
CCD 847BIT
CCD 858BIT
SYNC CLAMP
AUTO BIAS
CCD 843.5BIT
CCD 6BIT
S/H
DUTY COMP
CLOCK DRIVE
TIMING GEN.
VCO
PLL
1/3

IC302 LA7439

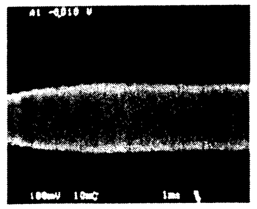

PB-FM-IN
MOD-OUT (DOC-STOP-H)
REG=4.2V
MAIN. DE EMPH-OUT
CLAMP
P/P CTL
MAIN-EMPH FILT
NL-EMPH FILT
PIC-CTL
AGC-TC2
YNR-CTL
NC-CTL
VIDEO-IN
Vcc-2
SYNC-OUT
FCA-FILT
VIDEO-OUT
COLOR-ROTARY IN
VCA-IN
QH. QH INS CHARA INS
CCD DRIVE
AGC-TC1 BALANCER
C-CCD DRIVE2
M/M̄. NL-ON
GND
Acc-FILT
KILLER-OUT
KILL-FILT
REC C-OUT PB-C-IN
AFC/APC FILT
SLD-FILT
FILT-CTL
BGP-OUT
Vcc-1
VXO-IN-B
VXO-IN-A
XO-OUT
REC-AGC-FILT TRICK-H
VXO-IN
XO-OUT
MODE CTL (PAL/MESECAM/NT)
NAF CTL
CHROMA INPUT (FROM COMP)
MODE-CTL
C-CCD IN
GND
C-CCD DRIVE1

①



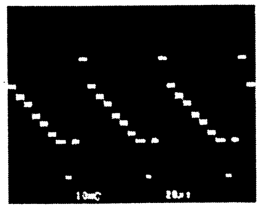
IC301-8
280mVp-p
REC

②



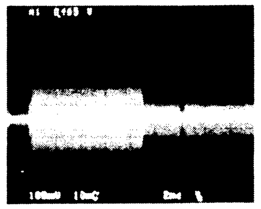
IC302-4
300mVp-p
PLAY

③



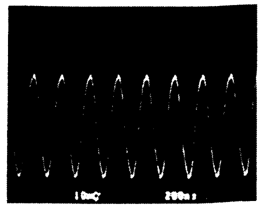
IC302-5
500mVp-p
REC

④



IC302-27
260mVp-p
PB

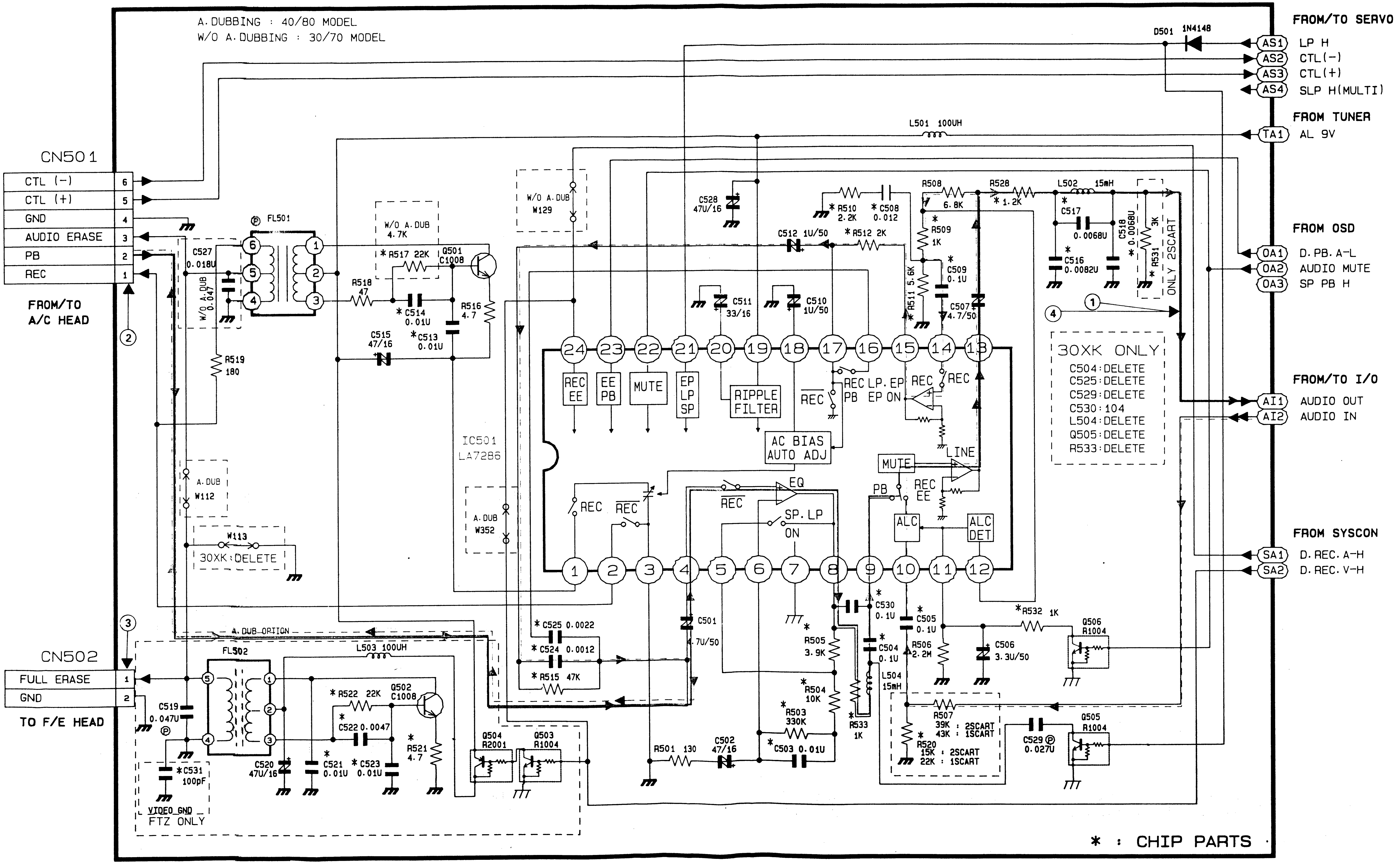
⑤



Q307-Emitter
420mVp-p
E/E, PB, REC

12-5. AUDIO

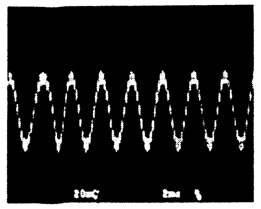
RED ———— PB PROCESS
- - - - - - REC PROCESS


A.DUBBING : 40/80 MODEL
W/O A.DUBBING : 30/70 MODEL
CN501
CTL (-)
CTL (+)
GND
AUDIO ERASE
PB
REC
FROM/TO A/C HEAD
CN502
FULL ERASE
GND
TO F/E HEAD
FROM/TO SERVO
AS1 LP H
AS2 CTL(-)
AS3 CTL(+)
AS4 SLP H(MULTI)
FROM TUNER
TA1 AL 9V
FROM OSD
OA1 D.PB.A-L
OA2 AUDIO MUTE
OA3 SP PB H
FROM/TO I/O
AI1 AUDIO OUT
AI2 AUDIO IN
FROM SYSCON
SA1 D.REC.A-H
SA2 D.REC.V-H
D501 1N4148
L501 100UH
IC501 LA7286
REC EE
EE PB
MUTE
EP LP SP
RIPPLE FILTER
AC BIAS AUTO ADJ
REC LP.EP
PB EP ON
LINE
EQ
SP.LP ON
ALC
ALC DET
FL501
FL502
Q501 C1008
Q502 C1008
Q504 A2001
Q503 R1004
Q505 R1004
Q506 R1004
L502 15mH
L503 100UH
L504 15mH
W/O A.DUB W129
W/O A.DUB 4.7K
A.DUB W112
A.DUB W352
W113 30XK:DELETE
A.DUB OPTION
ONLY 2SCART
R531 3K
C518 0.0068U
C516 0.0082U
C517 0.0068U
R508 6.8K
R528 1.2K
R509 1K
R510 2.2K
C508 0.012
R512 2K
C512 1U/50
C528 47U/16
C511 33/16
C510 1U/50
R511 5.6K
C509 0.1U
C507 4.7/50
C527 0.018U
W/O A.DUB 0.047
R517 22K
R518 47
C514 0.01U
R516 4.7
C515 47/16
C513 0.01U
R519 180
C525 0.0022
C524 0.0012
R515 47K
C501 4.7U/50
R501 130
C502 47/16
C503 0.01U
R503 330K
R504 10K
R505 3.9K
R533 1K
C530 0.1U
C504 0.1U
C505 0.1U
R506 2.2M
C506 3.3U/50
R532 1K
R507 39K : 2SCART 43K : 1SCART
R520 15K : 2SCART 22K : 1SCART
C529 0.027U
C519 0.047U
C531 100pF
VIDEO GND
FTZ ONLY
R522 22K
C522 0.0047
R521 4.7
C520 47U/16
C521 0.01U
C523 0.01U
30XK ONLY
C504:DELETE
C525:DELETE
C529:DELETE
C530:104
L504:DELETE
Q505:DELETE
R533:DELETE
* : CHIP PARTS

MODE / PIN NO	STOP	REC	PLAY
IC501			
1	9.0	4.0	9.0
2	0	0	0
3	0	0	0
4	4.0	4.0	4.0
5	4.0	4.0	4.0
6	4.0	4.0	4.0
7	0	0	0
8	4.0	4.0	4.0
9	4.0	4.0	4.0
10	4.0	4.0	4.0
11	0.5	0.5	0
12	0	0	0
13	4.0	4.0	4.0
14	4.0	4.0	4.0
15	4.0	4.0	4.0
16	0	4.0	0
17	4.0	4.0	4.0
18	0	0.8	0
19	9.0	9.0	9.0
20	9.0	9.0	9.0
21	0	0	0
22	0.8	0.8	0.8
23	4.5	4.5	0.8
24	0	5.0	0

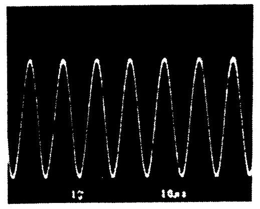
MODE / PIN NO	STOP	REC	PLAY
Q501			
E	9.0	4.0	9.0
B	9.0	2.5	9.0
C	9.0	8.9	9.0
Q502			
E	0	0	0
B	0.3	0	0.3
C	0.3	8.7	0.3
Q503			
E	0	0	0
B	0	4.9	0
C	9.0	0	9.0
Q504			
E	8.9	8.9	8.9
B	8.9	0	8.9
C	0.2	8.8	0.2
Q505			
E	0	0	0
B	0	0	0
C	0	0	0
Q506			
E	0	0	0
B	0.8	0.8	0.8
C	0.5	0.5	0

①



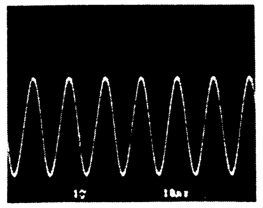
R531-Audio Out
0.7Vp-p
PB

②



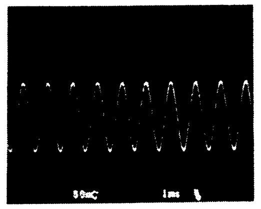
CN501-1
50Vp-p
REC

③



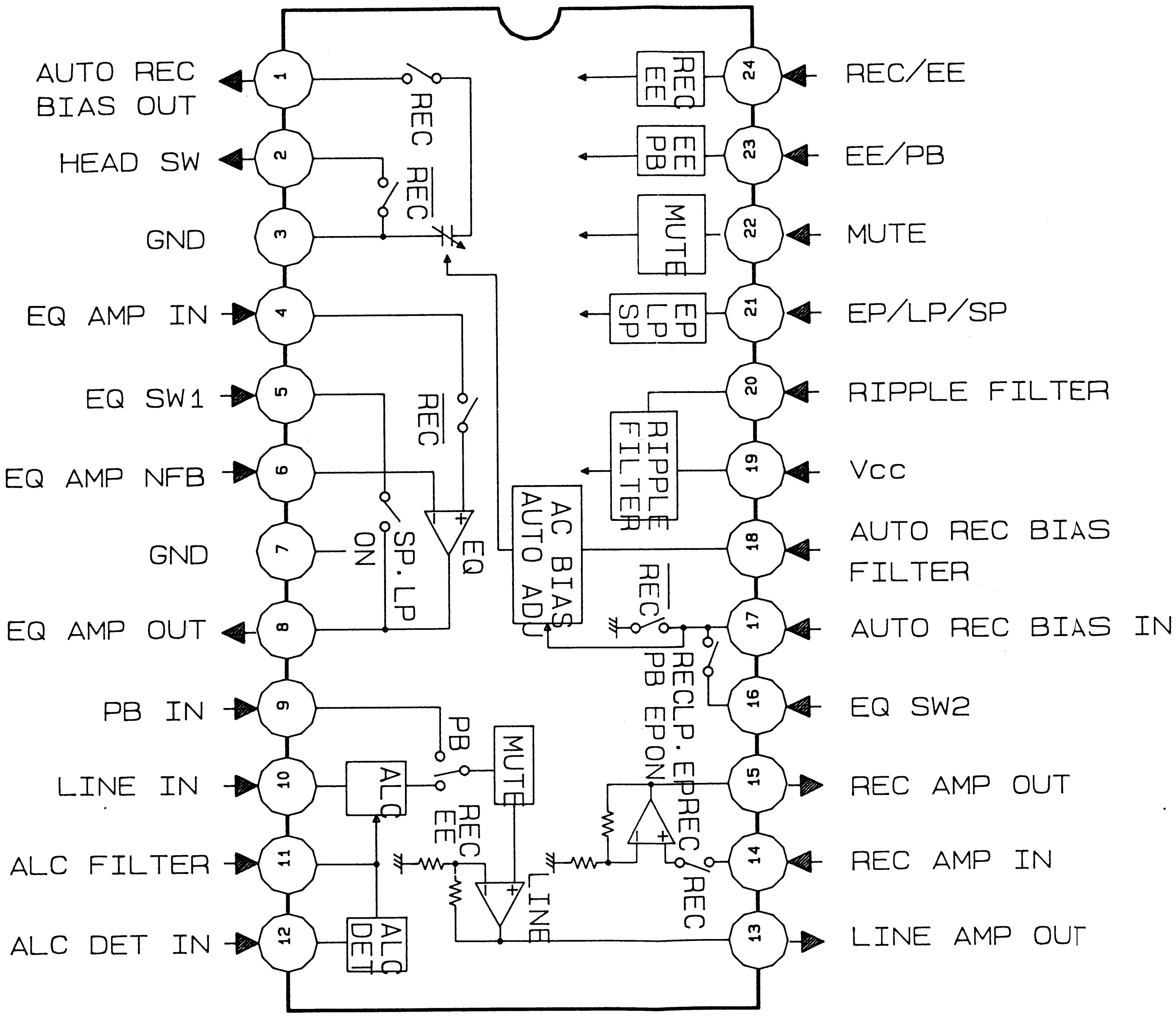
CN502-1
40Vp-p
REC

④

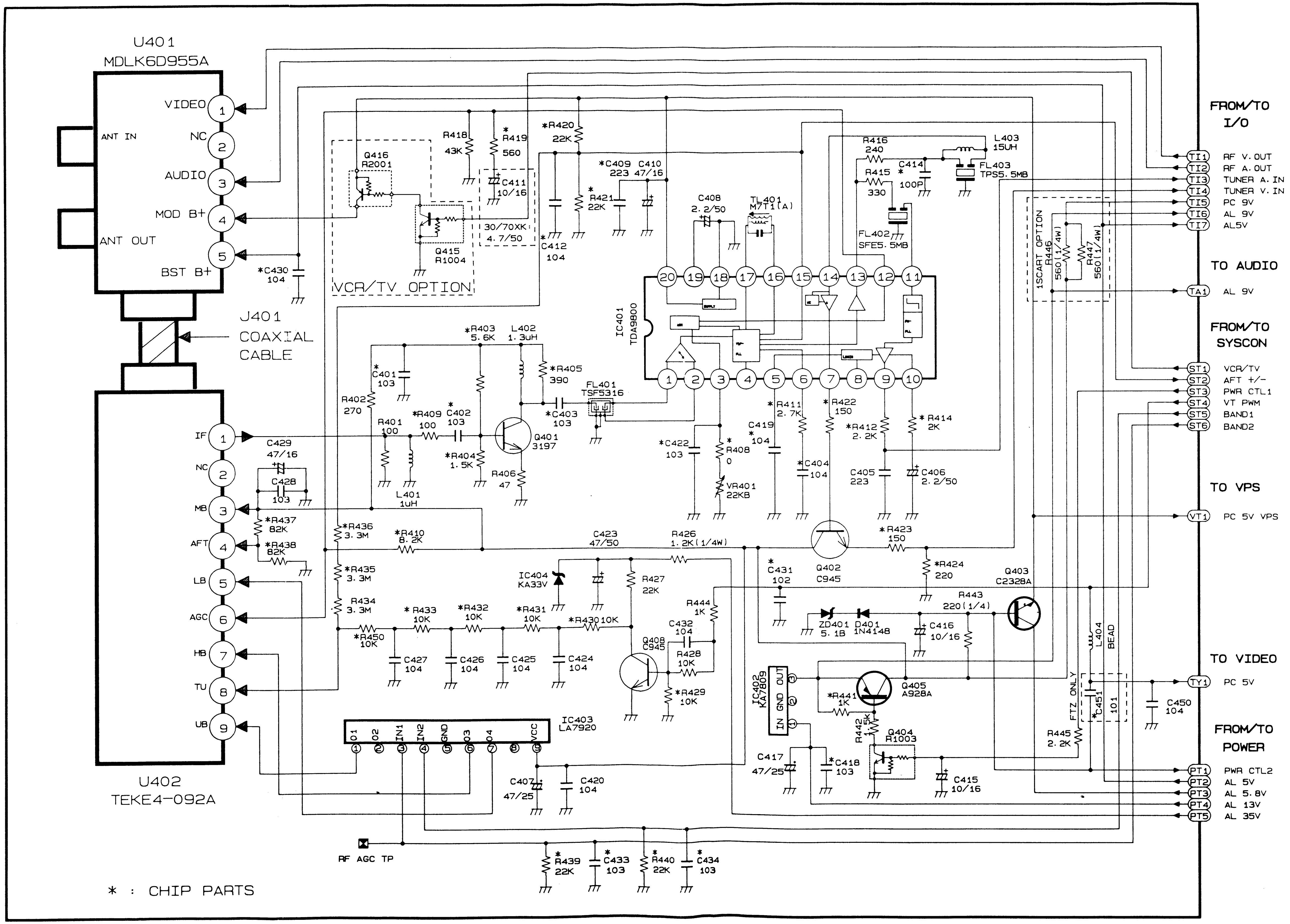


R531-Audio Out
1.45Vp-p
E/E, REC

IC501 LA7286


AUTO REC BIAS OUT
HEAD SW
GND
EQ AMP IN
EQ SW1
EQ AMP NFB
GND
EQ AMP OUT
PB IN
LINE IN
ALC FILTER
ALC DET IN
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
REC/EE
EE/PB
MUTE
EP/LP/SP
RIPPLE FILTER
Vcc
AUTO REC BIAS FILTER
AUTO REC BIAS IN
EQ SW2
REC AMP OUT
REC AMP IN
LINE AMP OUT
REC
REC
REC
SP.LP ON
EQ
AC BIAS AUTO ADJ
RIPPLE FILTER
REC EE
EE PB
MUTE
EP LP SP
REC
RECLP.EP PB EPON
REC
PB
MUTE
ALC
REC EE
LINE
ALC DET

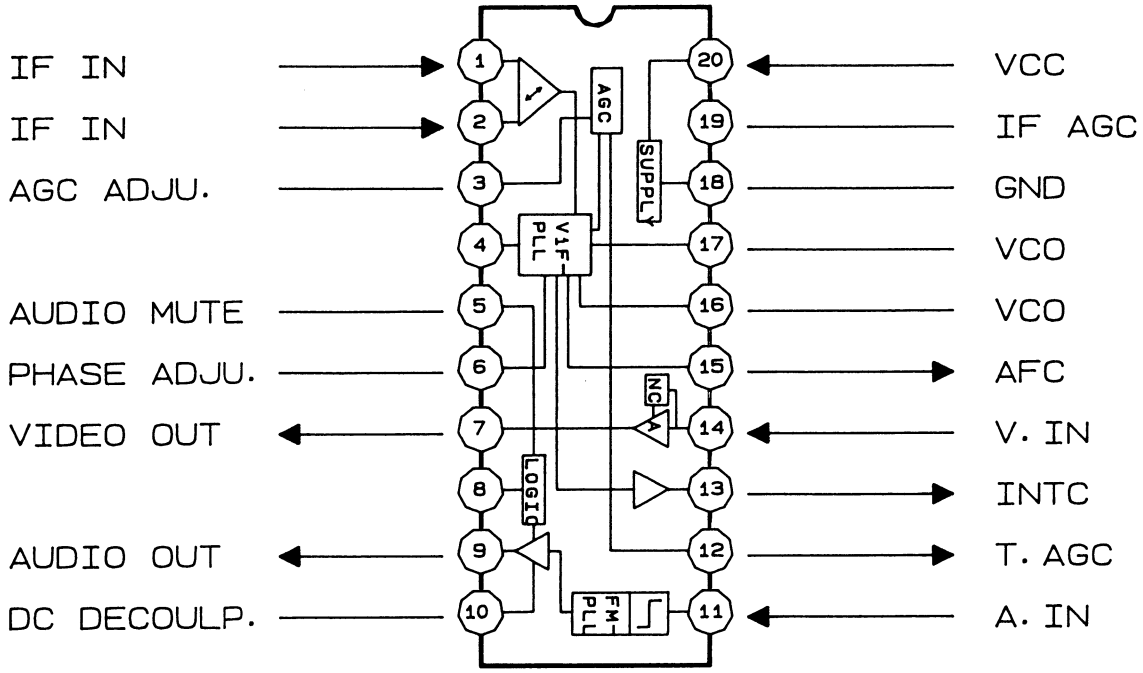
12-6. TUNER


U401
MDLK6D955A
VIDEO
ANT IN
NC
AUDIO
MOD B+
ANT OUT
BST B+
J401
COAXIAL
CABLE
U402
TEKE4-092A
IF
NC
MB
AFT
LB
AGC
HB
TU
UB
Q416
R2001
Q415
R1004
VCR/TV OPTION
R418
43K
*R419
560
C411
10/16
30/70XK:
4.7/50
*R420
22K
*R421
22K
*C409
223
C410
47/16
*C412
104
*C430
104
C408
2.2/50
TL401
M7T1(A)
IC401
TDA9800
R416
240
R415
330
C414
*
100P
L403
15UH
FL403
TPS5.5MB
FL402
SFE5.5MB
1SCART OPTION
R446
560(1/4W)
R447
560(1/4W)
*R403
5.6K
L402
1.3uH
*R405
390
*C401
103
R402
270
R401
100
*R409
100
*C402
103
*R404
1.5K
L401
1uH
Q401
3197
R406
47
FL401
TSF5316
*C403
103
*R411
2.7K
*R422
150
*C422
103
*R408
0
VR401
22KB
C419
*
104
*C404
104
*R412
2.2K
*R414
2K
C405
223
C406
2.2/50
C429
47/16
C428
103
*R437
82K
*R438
82K
*R436
3.3M
*R410
8.2K
*R435
3.3M
R434
3.3M
*R450
10K
*R433
10K
*R432
10K
*R431
10K
*R430
10K
C427
104
C426
104
C425
104
C424
104
C423
47/50
R426
1.2K(1/4W)
IC404
KA33V
R427
22K
R444
1K
C432
104
Q408
C945
R428
10K
*R429
10K
*C431
102
Q402
C945
*R423
150
*R424
220
Q403
C2328A
R443
220(1/4)
ZD401
5.1B
D401
1N4148
C416
10/16
L404
BEAD
FTZ ONLY
*C451
101
IC402
KA7809
IN GND OUT
Q405
A928A
*R441
1K
R442
1.5K
Q404
R1003
C417
47/25
*C418
103
C415
10/16
R445
2.2K
C450
104
IC403
LA7920
O1 O2 IN1 IN2 GND O3 O4 VCC
C407
47/25
C420
104
RF AGC TP
*R439
22K
*C433
103
*R440
22K
*C434
103
* : CHIP PARTS
FROM/TO I/O
TI1 RF V.OUT
TI2 RF A.OUT
TI3 TUNER A.IN
TI4 TUNER V.IN
TI5 PC 9V
TI6 AL 9V
TI7 AL5V
TO AUDIO
TA1 AL 9V
FROM/TO SYSCON
ST1 VCR/TV
ST2 AFT +/-
ST3 PWR CTL1
ST4 VT PWM
ST5 BAND1
ST6 BAND2
TO VPS
VT1 PC 5V VPS
TO VIDEO
TY1 PC 5V
FROM/TO POWER
PT1 PWR CTL2
PT2 AL 5V
PT3 AL 5.8V
PT4 AL 13V
PT5 AL 35V

TUNER

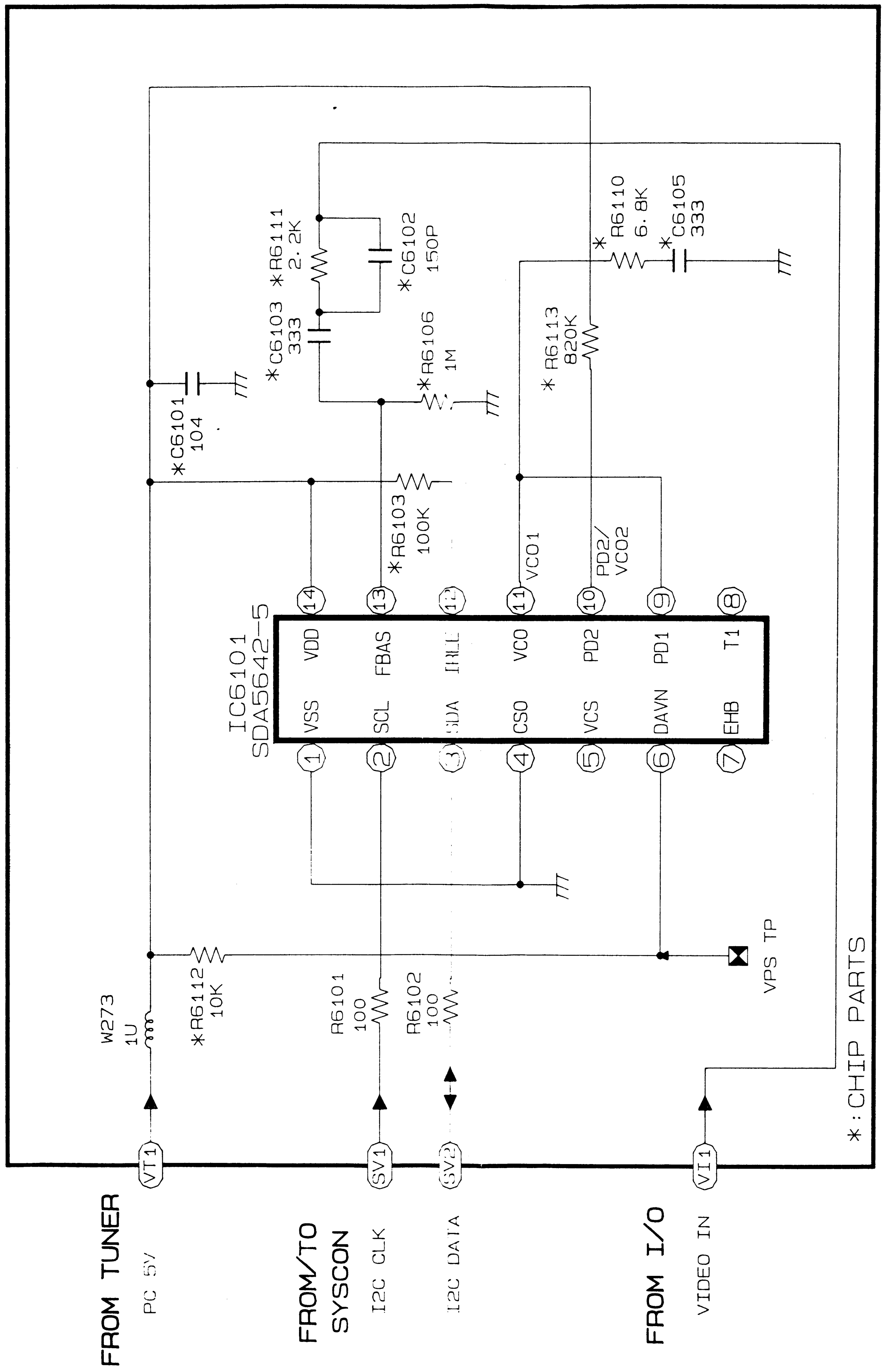
MODE / PIN NO	E-E
IC401	
1	3.3
2	3.3
3	0.8
4	1
5	3.1
6	2.6
7	2.4
8	0.8
9	1.8
10	1.5
11	2.6
12	4.2
13	2
14	2
15	2.6
16	2.8
17	2.8
18	0
19	3.2
20	5
Q401	
E	0.5
B	1.2
C	6.1
Q402	
E	9
B	1.4/3.2
C	0.8/2.6

IC401 TDA9800

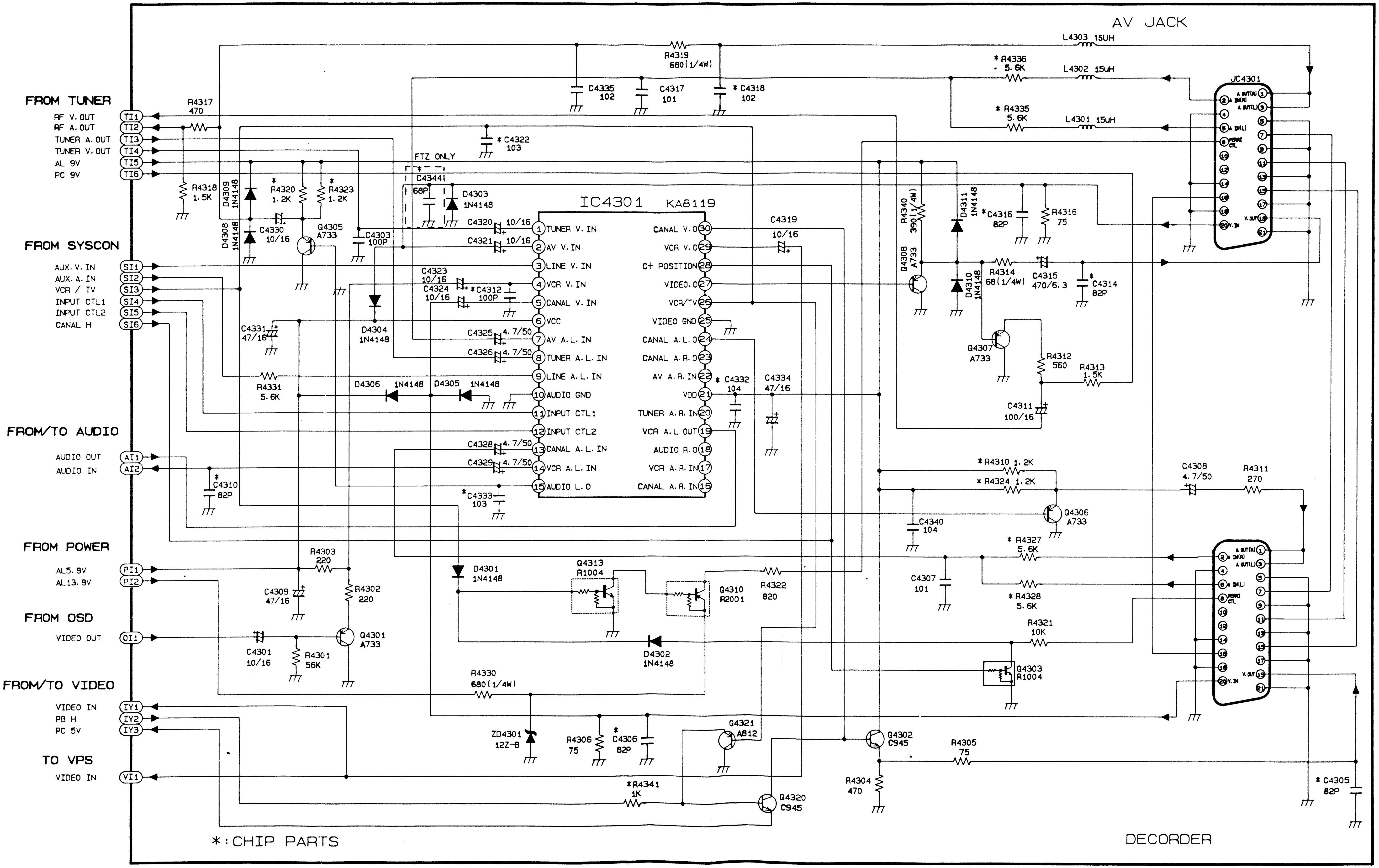

IF IN
IF IN
AGC ADJU.
AUDIO MUTE
PHASE ADJU.
VIDEO OUT
AUDIO OUT
DC DECOULP.
VCC
IF AGC
GND
VCO
VCO
AFC
V. IN
INTC
T. AGC
A. IN
AGC
SUPPL
VIF-PLL
NC
LOGIC
FM-PLL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

V.P.S

12-7. V.P.S

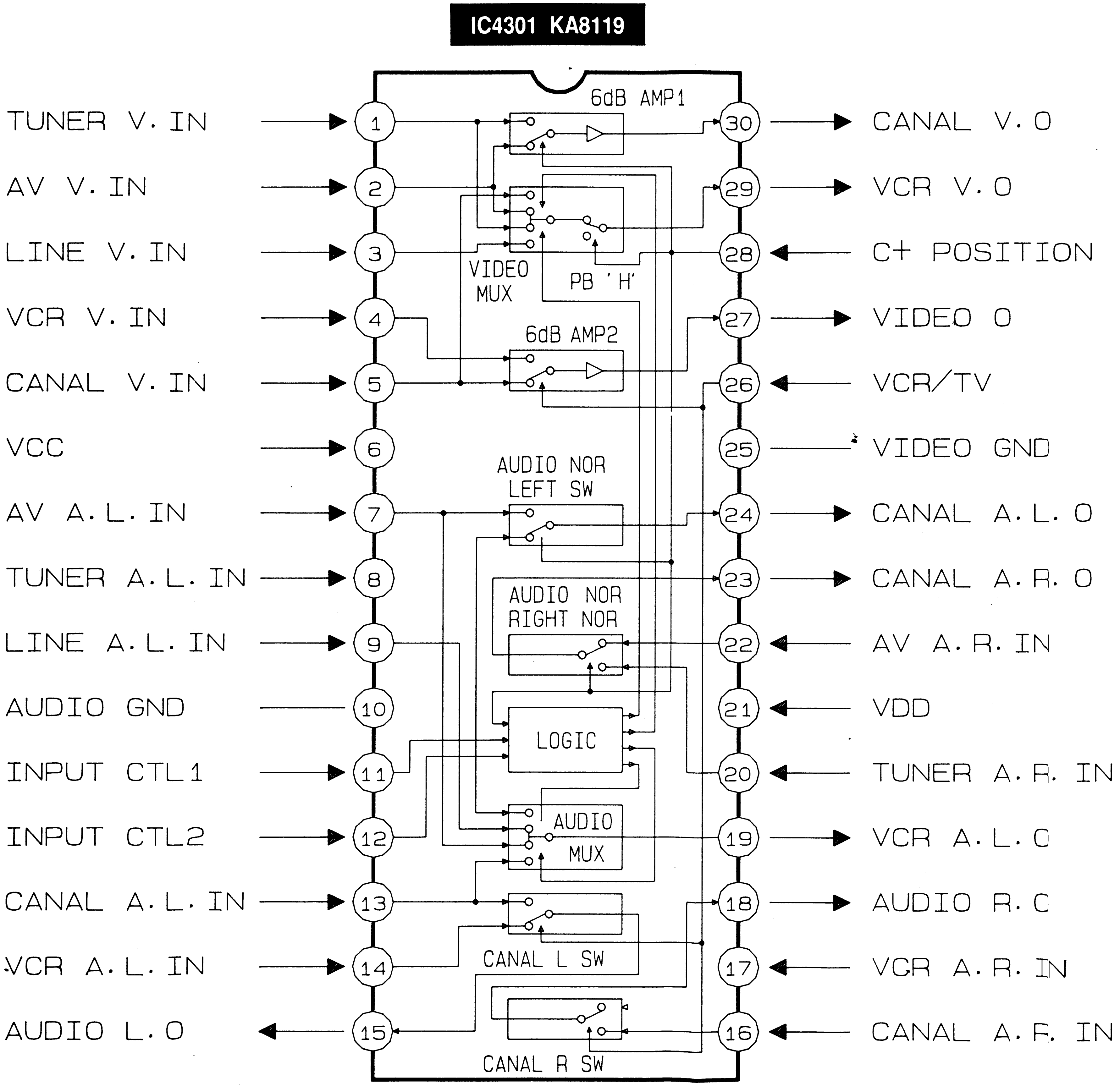

IC6101
SDA5642-5
VSS
SCL
SDA
CSO
VCS
DAVN
EHB
VDD
FBAS
INLL
VCO
PD2
PD1
T1
VCO1
PD2/VCO2
*C6101 104
*C6103 333
*R6111 2.2K
*C6102 150P
*R6106 1M
*R6113 820K
*R6110 6.8K
*C6105 333
*R6103 100K
*R6112 10K
W273 1U
R6101 100
R6102 100
VPS TP
VT1
SV1
SV2
VI1
FROM TUNER
PC 5V
FROM/TO SYSCON
I2C CLK
I2C DATA
FROM I/O
VIDEO IN
*: CHIP PARTS

12-8. I/O (2 SCART ONLY)

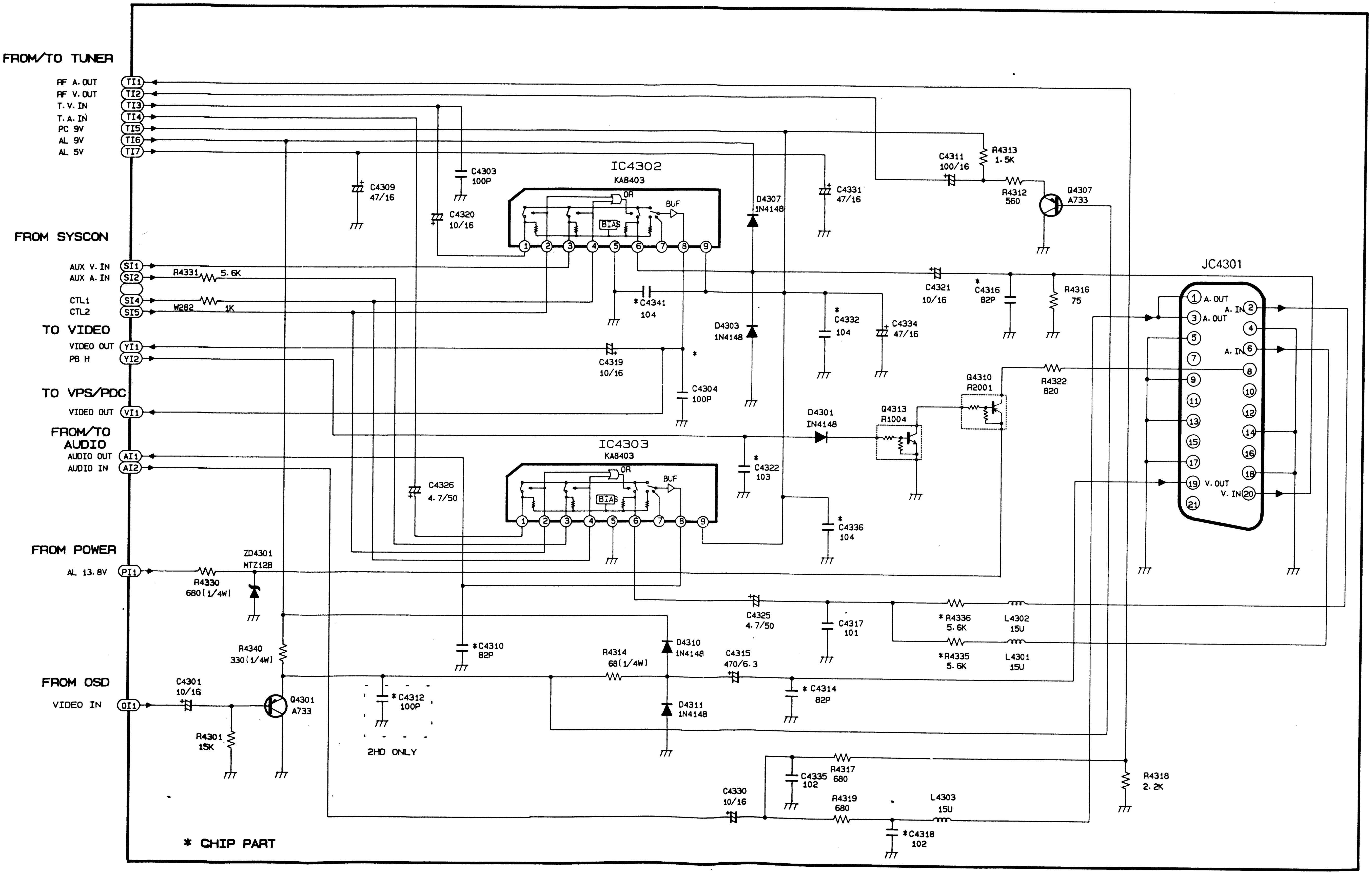

AV JACK
FROM TUNER
RF V.OUT
RF A.OUT
TUNER A.OUT
TUNER V.OUT
AL 9V
PC 9V
TI1
TI2
TI3
TI4
TI5
TI6
FROM SYSCON
AUX.V.IN
AUX.A.IN
VCR / TV
INPUT CTL1
INPUT CTL2
CANAL H
SI1
SI2
SI3
SI4
SI5
SI6
FROM/TO AUDIO
AUDIO OUT
AUDIO IN
AI1
AI2
FROM POWER
AL5.8V
AL13.8V
PI1
PI2
FROM OSD
VIDEO OUT
OI1
FROM/TO VIDEO
VIDEO IN
PB H
PC 5V
IY1
IY2
IY3
TO VPS
VIDEO IN
VI1
IC4301 KA8119
1 TUNER V.IN
2 AV V.IN
3 LINE V.IN
4 VCR V.IN
5 CANAL V.IN
6 VCC
7 AV A.L.IN
8 TUNER A.L.IN
9 LINE A.L.IN
10 AUDIO GND
11 INPUT CTL1
12 INPUT CTL2
13 CANAL A.L.IN
14 VCR A.L.IN
15 AUDIO L.O
30 CANAL V.O
29 VCR V.O
28 C+ POSITION
27 VIDEO.O
26 VCR/TV
25 VIDEO GND
24 CANAL A.L.O
23 CANAL A.R.O
22 AV A.R.IN
21 VDD
20 TUNER A.R.IN
19 VCR A.L OUT
18 AUDIO R.O
17 VCR A.R.IN
16 CANAL A.R.IN
R4317 470
R4318 1.5K
D4309 1N4148
D4308 1N4148
* R4320 1.2K
* R4323 1.2K
C4330 10/16
Q4305 A733
C4303 100P
FTZ ONLY
* C4344 68P
D4303 1N4148
C4335 102
C4317 101
* C4318 102
R4319 680(1/4W)
* C4322 103
C4320 10/16
C4321 10/16
C4323 10/16
C4324 10/16
* C4312 100P
D4304 1N4148
C4331 47/16
C4325 4.7/50
C4326 4.7/50
R4331 5.6K
D4306 1N4148
D4305 1N4148
C4328 4.7/50
C4329 4.7/50
* C4333 103
* C4310 82P
C4319 10/16
* C4332 104
C4334 47/16
L4303 15UH
* R4336 5.6K
L4302 15uH
* R4335 5.6K
L4301 15uH
JC4301
R4340 390(1/4W)
Q4308 A733
D4311 1N4148
D4310 1N4148
* C4316 82P
R4316 75
R4314 68(1/4W)
C4315 470/6.3
* C4314 82P
Q4307 A733
R4312 560
R4313 1.5K
C4311 100/16
A OUT(R) 1
A IN(R) 2
A OUT(L) 3
4
A IN(L) 6
PERI CTL 8
V.OUT 19
V.IN 20
21
* R4310 1.2K
* R4324 1.2K
C4340 104
Q4306 A733
C4308 4.7/50
R4311 270
* R4327 5.6K
C4307 101
* R4328 5.6K
R4321 10K
Q4303 R1004
R4303 220
C4309 47/16
R4302 220
C4301 10/16
R4301 56K
Q4301 A733
D4301 1N4148
Q4313 R1004
Q4310 R2001
R4322 820
D4302 1N4148
R4330 680(1/4W)
ZD4301 12Z-B
R4306 75
* C4306 82P
Q4321 A812
Q4302 C945
R4305 75
R4304 470
* R4341 1K
Q4320 C945
* C4305 82P
*: CHIP PARTS
DECORDER

MODE PIN NO	E-E
IC4301	
1	3.9
2	3.4
3	3.2
4	3.9
5	3.4
6	5
7	5.6
8	5.6
9	5.7
10	0
11	4.8
12	0
13	5.7
14	5.7
15	4.2
16	
17	
18	
19	4.2
20	
21	9
22	
23	
24	4.2
25	0
26	5
27	2.4
28	0
29	2.4
30	1.5

MODE PIN NO	E-E	BLUE
Q4301		
E	1.3/3.4	1.5/2.9
B	0.6/3.2	0.8/2.2
C	0	0
Q4307		
E	2.1/4.2	2.1/3.4
B	2.7/4.8	2.8/4
C	0	0
Q4308		
E	2.1/4.2	2.1/3.4
B	1.4/3.5	1.4/2.7
C	0	0

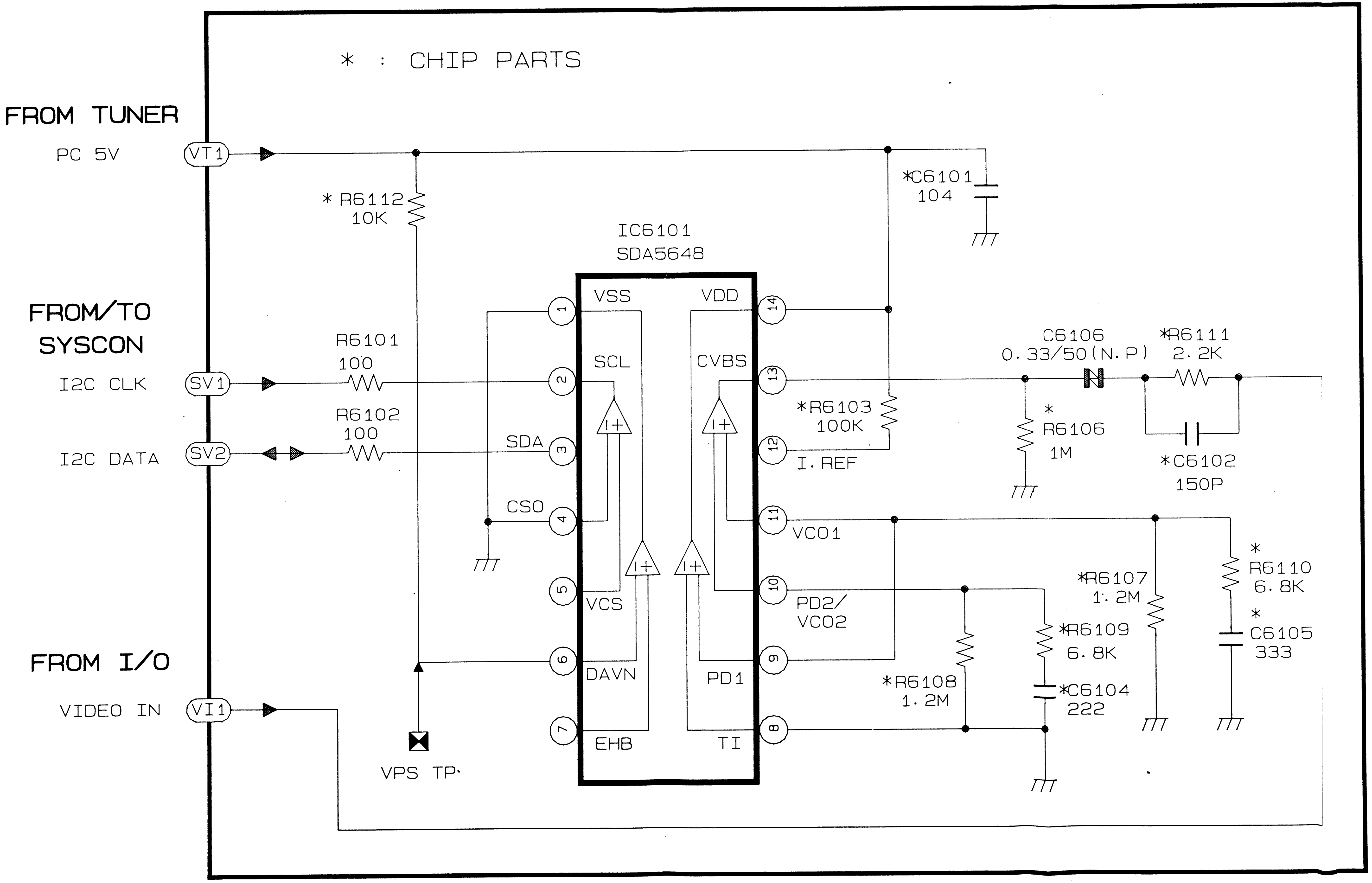

IC4301 KA8119
TUNER V. IN
AV V. IN
LINE V. IN
VCR V. IN
CANAL V. IN
VCC
AV A. L. IN
TUNER A. L. IN
LINE A. L. IN
AUDIO GND
INPUT CTL1
INPUT CTL2
CANAL A. L. IN
VCR A. L. IN
AUDIO L. O
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
6dB AMP1
VIDEO MUX
PB 'H'
6dB AMP2
AUDIO NOR LEFT SW
AUDIO NOR RIGHT NOR
LOGIC
AUDIO MUX
CANAL L SW
CANAL R SW
CANAL V. O
VCR V. O
C+ POSITION
VIDEO O
VCR/TV
VIDEO GND
CANAL A. L. O
CANAL A. R. O
AV A. R. IN
VDD
TUNER A. R. IN
VCR A. L. O
AUDIO R. O
VCR A. R. IN
CANAL A. R. IN

12-9. I/O (1 SCART ONLY)


FROM/TO TUNER
RF A. OUT TI1
RF V. OUT TI2
T. V. IN TI3
T. A. IN TI4
PC 9V TI5
AL 9V TI6
AL 5V TI7
FROM SYSCON
AUX V. IN SI1
AUX A. IN SI2
CTL1 SI4
CTL2 SI5
R4331 5.6K
W282 1K
TO VIDEO
VIDEO OUT YI1
PB H YI2
TO VPS/PDC
VIDEO OUT VI1
FROM/TO AUDIO
AUDIO OUT AI1
AUDIO IN AI2
FROM POWER
AL 13.8V PI1
FROM OSD
VIDEO IN OI1
IC4302
KA8403
IC4303
KA8403
OR
BUF
BIAS
C4303 100P
C4309 47/16
C4320 10/16
C4331 47/16
D4307 1N4148
C4311 100/16
R4313 1.5K
R4312 560
Q4307 A733
C4321 10/16
*C4316 82P
R4316 75
*C4341 104
*C4332 104
C4334 47/16
D4303 1N4148
C4319 10/16
C4304 100P
Q4310 R2001
R4322 820
Q4313 R1004
D4301 1N4148
*C4322 103
*C4336 104
C4326 4.7/50
JC4301
A. OUT 1
A. OUT 3
A. IN 2
A. IN 6
V. OUT 19
V. IN 20
ZD4301 MTZ12B
R4330 680(1/4W)
R4340 330(1/4W)
*C4310 82P
R4314 68(1/4W)
D4310 1N4148
D4311 1N4148
C4315 470/6.3
C4325 4.7/50
C4317 101
*R4336 5.6K
L4302 15U
*R4335 5.6K
L4301 15U
*C4314 82P
C4301 10/16
R4301 15K
Q4301 A733
*C4312 100P
2HD ONLY
C4335 102
R4317 680
R4319 680
L4303 15U
C4330 10/16
*C4318 102
R4318 2.2K
* CHIP PART

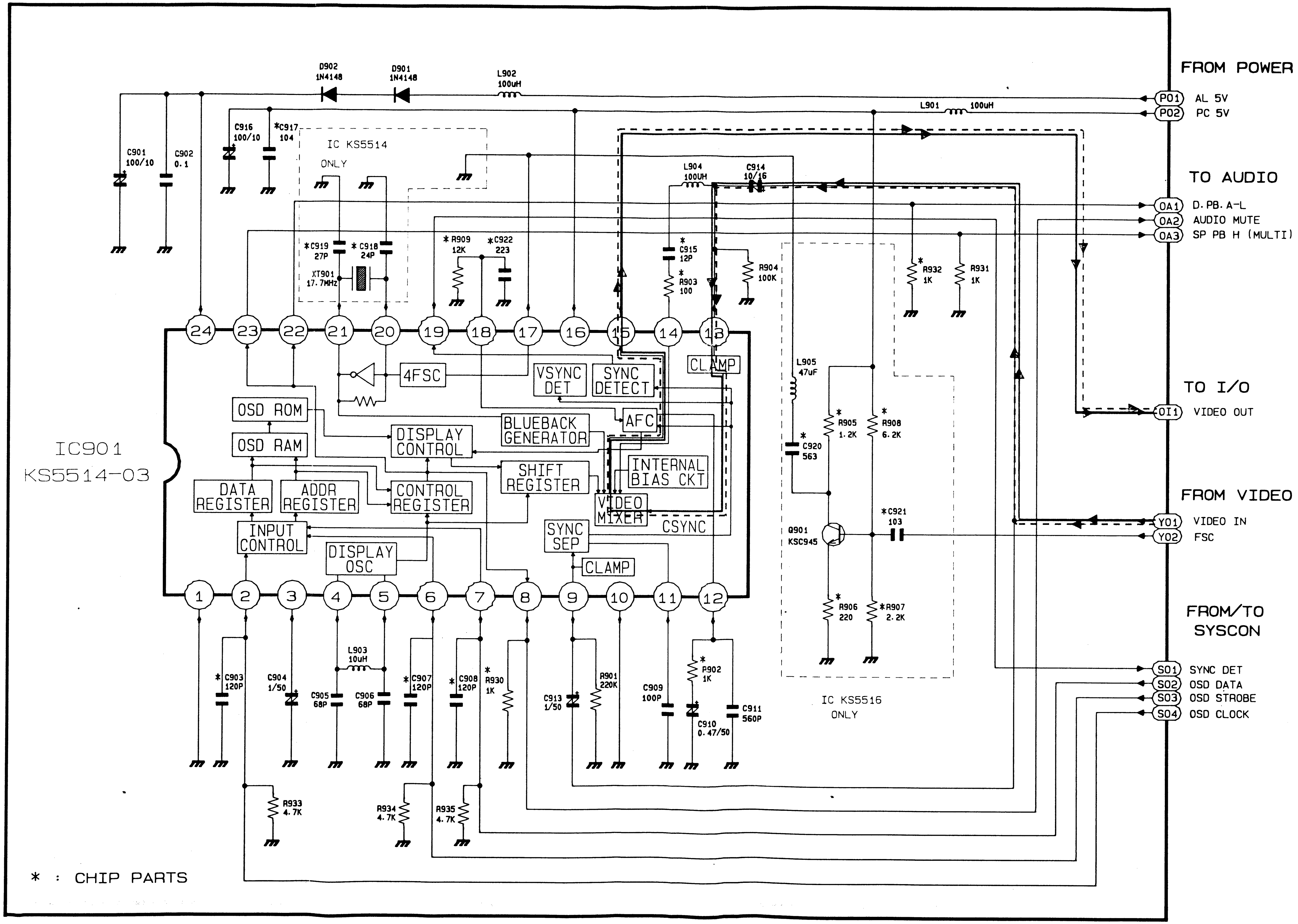
	CTL1	CTL2
A/V	0	0
AUX	0	1
TUNER	1	0

12-10. P.D.C


* : CHIP PARTS
FROM TUNER
PC 5V
VT1
FROM/TO SYSCON
I2C CLK
SV1
I2C DATA
SV2
FROM I/O
VIDEO IN
VI1
* R6112
10K
R6101
100
R6102
100
VPS TP
IC6101
SDA5648
VSS
SCL
SDA
CSO
VCS
DAVN
EHB
VDD
CVBS
I. REF
VCO1
PD2/ VCO2
PD1
TI
1
2
3
4
5
6
7
8
9
10
11
12
13
14
*C6101
104
*R6103
100K
C6106
0. 33/50(N. P)
*R6111
2. 2K
* R6106
1M
*C6102
150P
*R6107
1. 2M
* R6110
6. 8K
* C6105
333
*R6109
6. 8K
*C6104
222
*R6108
1. 2M

12-11. O.S.D

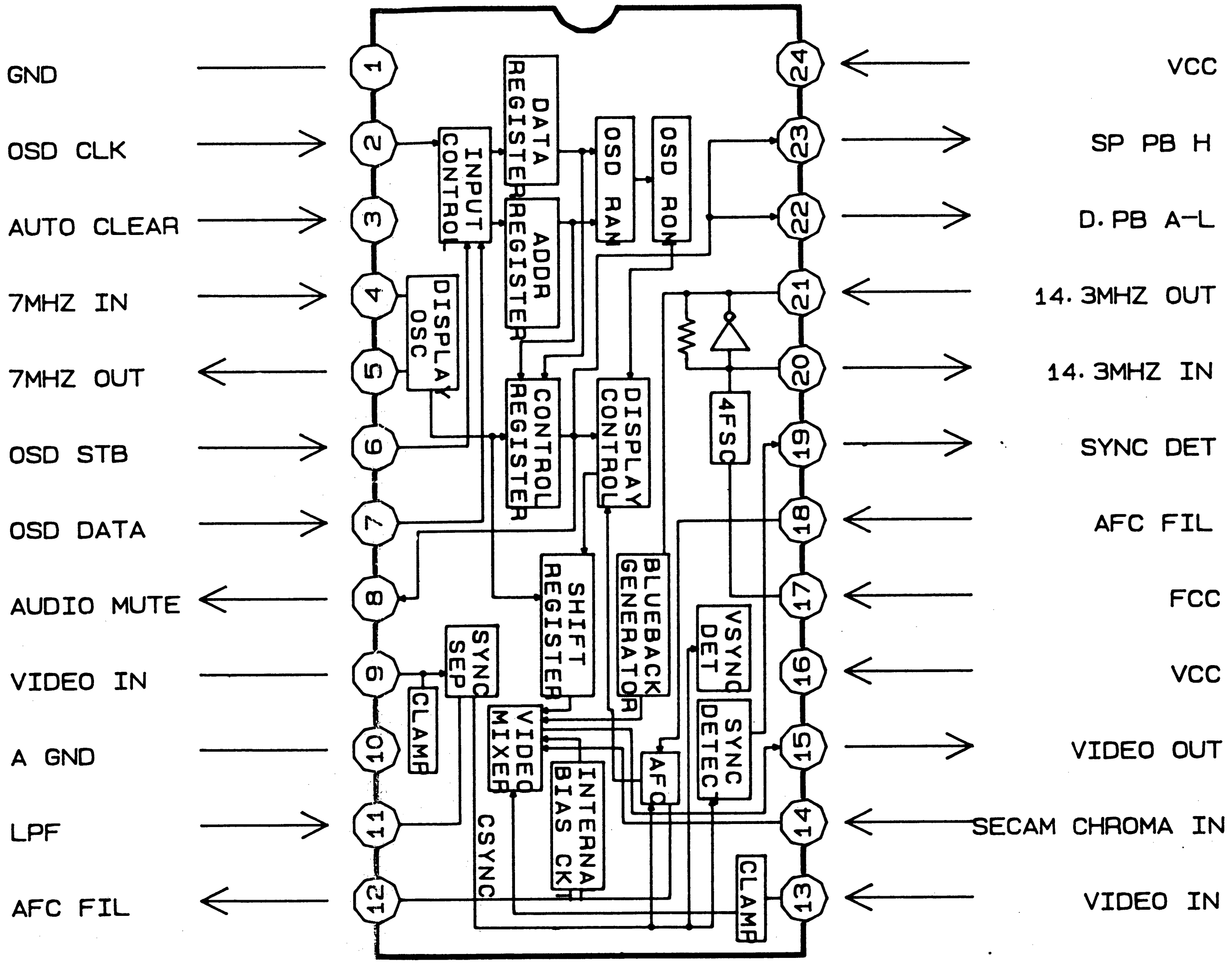
RED
——— PB PROCESS
- - - - - REC PROCESS


FROM POWER
P01 AL 5V
P02 PC 5V
TO AUDIO
OA1 D.PB.A-L
OA2 AUDIO MUTE
OA3 SP PB H (MULTI)
TO I/O
OI1 VIDEO OUT
FROM VIDEO
Y01 VIDEO IN
Y02 FSC
FROM/TO SYSCON
S01 SYNC DET
S02 OSD DATA
S03 OSD STROBE
S04 OSD CLOCK
IC901
KS5514-03
D902 1N4148
D901 1N4148
L902 100uH
L901 100uH
C901 100/10
C902 0.1
C916 100/10
*C917 104
IC KS5514 ONLY
*C919 27P
*C918 24P
XT901 17.7MHz
*R909 12K
*C922 223
L904 100UH
C914 10/16
*C915 12P
*R903 100
R904 100K
*R932 1K
R931 1K
L905 47uF
*C920 563
*R905 1.2K
*R908 6.2K
*C921 103
Q901 KSC945
*R906 220
*R907 2.2K
IC KS5516 ONLY
OSD ROM
OSD RAM
DATA REGISTER
ADDR REGISTER
INPUT CONTROL
DISPLAY OSC
DISPLAY CONTROL
CONTROL REGISTER
4FSC
VSYNC DET
SYNC DETECT
CLAMP
BLUEBACK GENERATOR
AFC
SHIFT REGISTER
INTERNAL BIAS CKT
VIDEO MIXER
CSYNC
SYNC SEP
CLAMP
*C903 120P
C904 1/50
L903 10uH
C905 68P
C906 68P
*C907 120P
*C908 120P
*R930 1K
C913 1/50
R901 220K
C909 100P
*R902 1K
C910 0.47/50
C911 560P
R933 4.7K
R934 4.7K
R935 4.7K

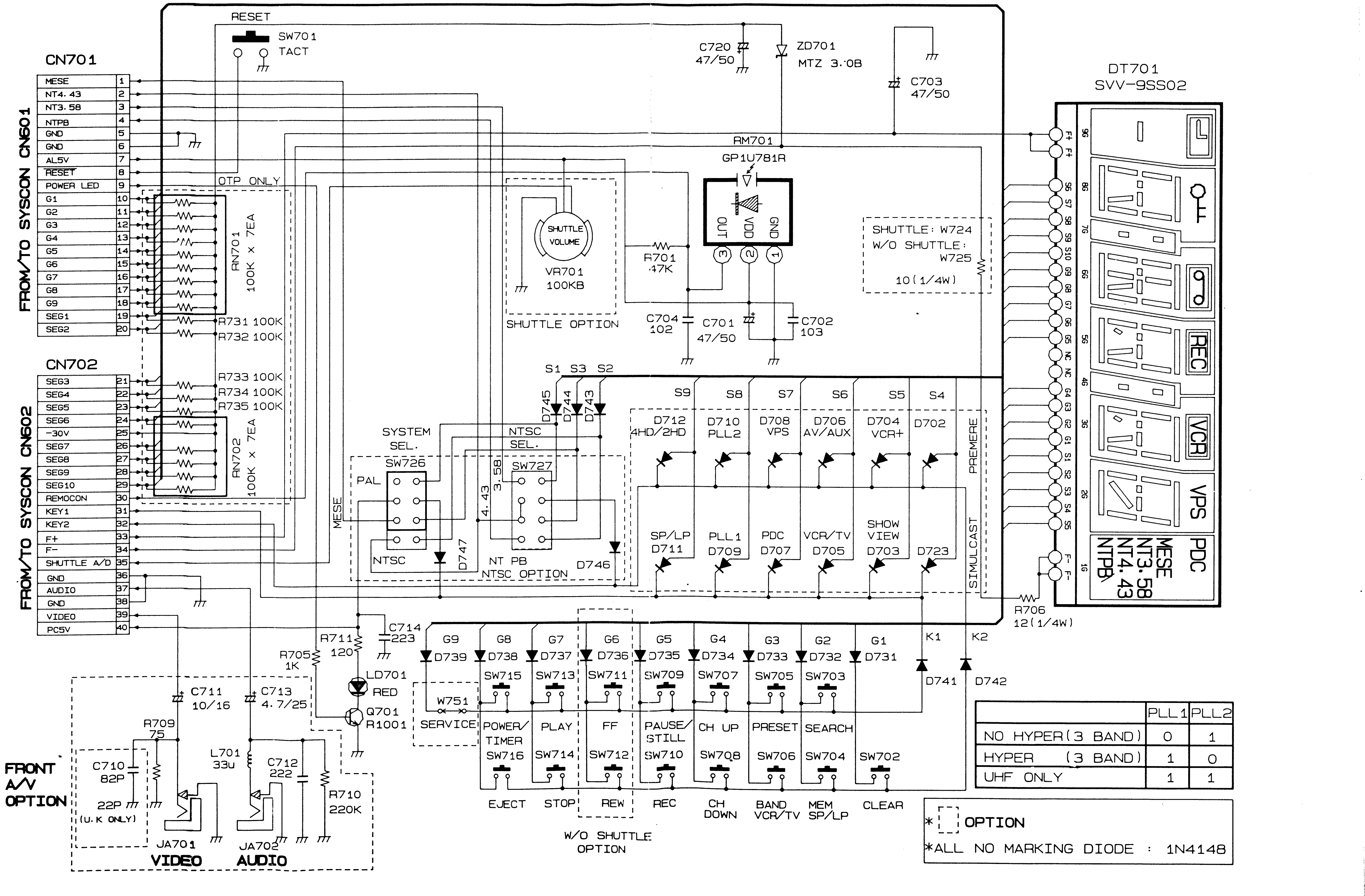
* : CHIP PARTS

MODE PIN NO	E-E	BLUE
IC901		
1	0	0
2	0 - 4	0 - 4
3	3.6	3.6
4	1.9	1.9
5	1.5	1.5
6	0 - 4	0 - 4
7	0 - 4	0 - 4
8	0.8	0.8
9	1.6	2.2
10	0	0
11	1.9	2.4
12	2.2	4.6
13	1.6	2.1
14	1.9	2.1
15	3.0	3.0
16	4.9	4.9
17	0	0
18	0.7	0
19	0	4.9
20	1.8	1.8
21	1.8	1.8
22	0.9	0.9
23	3.9	3.9
24	3.6	3.6

IC901 KS5514


GND
OSD CLK
AUTO CLEAR
7MHZ IN
7MHZ OUT
OSD STB
OSD DATA
AUDIO MUTE
VIDEO IN
A GND
LPF
AFC FIL
1
2
3
4
5
6
7
8
9
10
11
12
DATA REGISTER
INPUT CONTROL
ADDR REGISTER
OSD RAM
OSD ROM
DISPLAY OSC
CONTROL REGISTER
DISPLAY CONTROL
4FSC
SHIFT REGISTER
BLUEBACK GENERATOR
VSYNC DET
SYNC SEP
CLAMP
VIDEO MIXER
INTERNAL BIAS CKT
AFC
SYNC DETEC
CSYNC
CLAMP
24
23
22
21
20
19
18
17
16
15
14
13
VCC
SP PB H
D.PB A-L
14.3MHZ OUT
14.3MHZ IN
SYNC DET
AFC FIL
FCC
VCC
VIDEO OUT
SECAM CHROMA IN
VIDEO IN

12-12. FUNCTION-TIMER

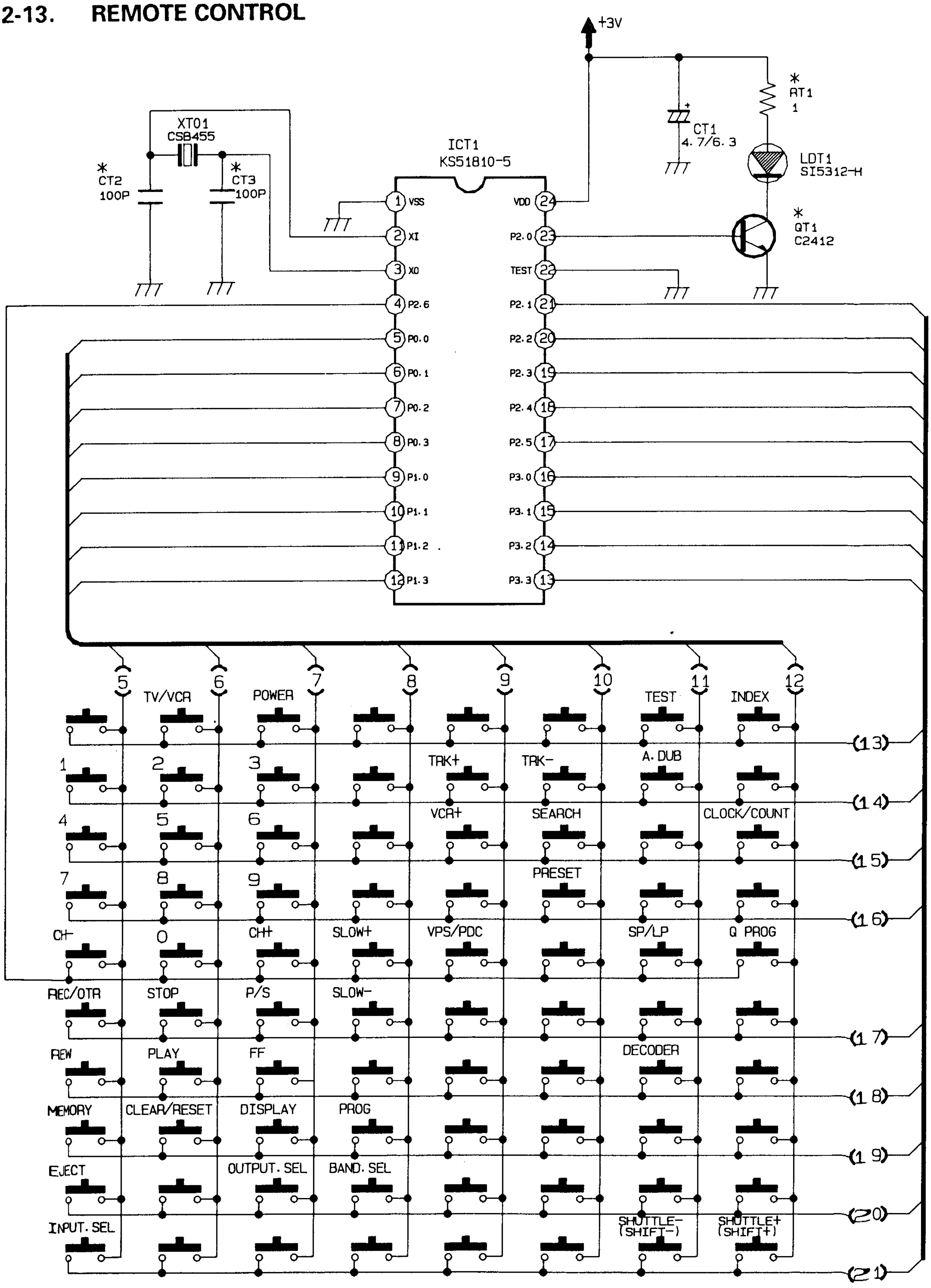

CN701
FROM/TO SYSCON CN601
MESE 1
NT4.43 2
NT3.58 3
NTPB 4
GND 5
GND 6
AL5V 7
RESET 8
POWER LED 9
G1 10
G2 11
G3 12
G4 13
G5 14
G6 15
G7 16
G8 17
G9 18
SEG1 19
SEG2 20
CN702
FROM/TO SYSCON CN602
SEG3 21
SEG4 22
SEG5 23
SEG6 24
-30V 25
SEG7 26
SEG8 27
SEG9 28
SEG10 29
REMOCON 30
KEY1 31
KEY2 32
F+ 33
F- 34
SHUTTLE A/D 35
GND 36
AUDIO 37
GND 38
VIDEO 39
PC5V 40
RESET
SW701
TACT
OTP ONLY
RN701
100K × 7EA
R731 100K
R732 100K
R733 100K
R734 100K
R735 100K
RN702
100K × 7EA
SHUTTLE VOLUME
VR701
100KB
SHUTTLE OPTION
C720
47/50
ZD701
MTZ 3.0B
C703
47/50
RM701
GP1U781R
OUT
VDD
GND
R701
47K
C704
102
C701
47/50
C702
103
SHUTTLE: W724
W/O SHUTTLE:
W725
10(1/4W)
DT701
SVV-9SS02
S1 S3 S2
D745
D744
D743
SYSTEM SEL.
SW726
PAL
NTSC
MESE
4.43
3.58
NTSC SEL.
SW727
NT PB
NTSC OPTION
D747
D746
S9 S8 S7 S6 S5 S4
D712
4HD/2HD
D710
PLL2
D708
VPS
D706
AV/AUX
D704
VCR+
D702
PREMERE
SP/LP
D711
PLL1
D709
PDC
D707
VCR/TV
D705
SHOW VIEW
D703
D723
SIMULCAST
R706
12(1/4W)
F+ F+ S6 S7 S8 S9 S10 G9 G8 G7 G6 G5 NC NC G4 G3 G2 G1 S1 S2 S3 S4 S5 F- F-
REC
VCR
VPS
PDC
MESE
NT3.58
NT4.43
NTPB
R711
120
C714
223
R705
1K
LD701
RED
Q701
R1001
G9 G8 G7 G6 G5 G4 G3 G2 G1
D739 D738 D737 D736 D735 D734 D733 D732 D731
K1 K2
D741 D742
W751
SERVICE
SW715
POWER/TIMER
SW716
EJECT
SW713
PLAY
SW714
STOP
SW711
FF
SW712
REW
SW709
PAUSE/STILL
SW710
REC
SW707
CH UP
SW708
CH DOWN
SW705
PRESET
SW706
BAND VCR/TV
SW703
SEARCH
SW704
MEM SP/LP
SW702
CLEAR
W/O SHUTTLE OPTION
FRONT A/V OPTION
C711
10/16
C713
4.7/25
R709
75
C710
82P
22P
(U.K ONLY)
L701
33u
C712
222
R710
220K
JA701
VIDEO
JA702
AUDIO

	PLL1	PLL2
NO HYPER(3 BAND)	0	1
HYPER (3 BAND)	1	0
UHF ONLY	1	1

* [ ] OPTION

*ALL NO MARKING DIODE : 1N4148

12-13. REMOTE CONTROL


+3V
* RT1 1
CT1 4.7/6.3
LDT1 SI5312-H
* QT1 C2412
XT01 CSB455
* CT2 100P
* CT3 100P
ICT1 KS51810-5
1 VSS
2 XI
3 XO
4 P2.6
5 P0.0
6 P0.1
7 P0.2
8 P0.3
9 P1.0
10 P1.1
11 P1.2
12 P1.3
24 VDD
23 P2.0
22 TEST
21 P2.1
20 P2.2
19 P2.3
18 P2.4
17 P2.5
16 P3.0
15 P3.1
14 P3.2
13 P3.3
5
6
7
8
9
10
11
12
TV/VCR
POWER
TEST
INDEX
(13)
1
2
3
TRK+
TRK-
A.DUB
(14)
4
5
6
VCR+
SEARCH
CLOCK/COUNT
(15)
7
8
9
PRESET
(16)
CH-
0
CH+
SLOW+
VPS/PDC
SP/LP
Q PROG
REC/OTR
STOP
P/S
SLOW-
(17)
REW
PLAY
FF
DECODER
(18)
MEMORY
CLEAR/RESET
DISPLAY
PROG
(19)
EJECT
OUTPUT.SEL
BAND.SEL
(20)
INPUT.SEL
SHUTTLE- (SHIFT-)
SHUTTLE+ (SHIFT+)
(21)